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E8           34     GUTTERSON N/AU
E9           27     GUTTERSON N I/AU
E10          43     GUTTERSON NEAL/AU
E11           2     GUTTERSON NEAL COURTNEY/AU
E12          10     GUTTERSON NEAL I/AU

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E7           27     GUTTERSON N I/AU
E8           43     GUTTERSON NEAL/AU
E9            2     GUTTERSON NEAL COURTNEY/AU
E10          10     GUTTERSON NEAL I/AU
E11           1     GUTTERSON NEAL IRA/AU
E12           1     GUTTERSON S/AU

=> s e6-e11
L1          117 ("GUTTERSON N"/AU OR "GUTTERSON N I"/AU OR "GUTTERSON NEAL"/AU
                OR "GUTTERSON NEAL COURTNEY"/AU OR "GUTTERSON NEAL I"/AU OR
                "GUTTERSON NEAL IRA"/AU)

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2           58 DUP REM L1 (59 DUPLICATES REMOVED)

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L2   ANSWER 1 OF 58  CAPLUS  COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER:         2004:414698  CAPLUS
DOCUMENT NUMBER:          140:401369
TITLE:                    Arabidopsis transcription factors sequence homologs,
                          orthologs thereof, and transgenic plants with improved
                          abiotic stress tolerance produced by using the same
INVENTOR(S):              Heard, Jacqueline E.; Riechmann, Jose Luis; Creelman,
                          Robert A.; Ratcliffe, Oliver; Kumimoto, Roderick W.;
                          Gutterson, Neal; Reuber, T. Lynne; Pineda,
                          Omaira; Libby, Jeffrey M.; Sherman, Bradley K.
PATENT ASSIGNEE(S):       USA
SOURCE:                   U.S. Pat. Appl. Publ., 117 pp., Cont.-in-part of U.S.
                          Ser. No. 810,836.
                          CODEN: USXXCO
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DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004098764	A1	20040520	US 2003-685922	20031014
US 2002142281	A1	20021003	US 2001-810836	20010316

PRIORITY APPLN. INFO.: US 2001-810836 A2 20010316

AB The invention relates to plant transcription factor polypeptides, polynucleotides that encode them, homologs from a variety of plant species, and methods of using the polynucleotides and polypeptides to produce transgenic plants having advantageous properties, including improved drought and other osmotic stress tolerance, as compared to wild-type or reference plants. Sequence information related to these polynucleotides and polypeptides can also be used in bioinformatic search methods to identify related sequences and is also disclosed. Exemplary polynucleotides encoding the transcription facto polypeptides of the invention were identified in the Arabidopsis thaliana GenBank database. Addnl. polynucleotides of the invention were identified by screening Arabidopsis thaliana and/or other plant cDNA libraries with probes corresponding to known DNA-binding proteins containing a AP2 domain, a DML motif, and a B3 domain.

L2 ANSWER 2 OF 58 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2004113660 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15003225
TITLE: Genomics applications to biotech traits: a revolution in progress?.
AUTHOR: **Gutterson Neal**; Zhang James Z
CORPORATE SOURCE: Mendel Biotechnology, 21375 Cabot Boulevard, Hayward, California 94545, USA.. ngutterson@medelbio.com
SOURCE: Current opinion in plant biology, (2004 Apr) 7 (2) 226-30. Ref: 49
Journal code: 100883395. ISSN: 1369-5266.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200406
ENTRY DATE: Entered STN: 20040309
Last Updated on STN: 20040604
Entered Medline: 20040603

AB Twenty years since the inception of the agricultural biotechnology era, only two products have had a significant impact in the market place: herbicide-resistant and insect-resistant crops. Additional products have been pursued but little success has been achieved, principally because of limited understanding of key genetic intervention points. Genomics tools have fueled a new strategy for identifying candidate genes. Primarily thanks to the application of functional genomics in Arabidopsis and other plants, the industry is now overwhelmed with candidate genes for transgenic intervention points. This success necessitates the application of genomics to the rapid validation of gene function and mode of action. As one example, the development of C-box binding factors (CBFs) for enhanced freezing and drought tolerance has been rapidly advanced because of the improved understanding generated by genomics technologies.

L2 ANSWER 3 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2003:334506 CAPLUS
DOCUMENT NUMBER: 138:332873
TITLE: Plant cell culture and selection system for selecting target genes modifying cellular function

INVENTOR(S): Engler, Dean; Scofield, Steven; **Gutterson, Neal**; Balint-Kurti, Peter John
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003082580	A1	20030501	US 2002-172586	20020613

PRIORITY APPLN. INFO.: US 2001-303440P P 20010706

AB The present invention provides methods of selecting and transforming plant cells in large scale in vitro liquid cultures to select target genes which modifying cellular function. In some methods of the invention, cells are selected that comprise a suppressive nucleic acid sequence that suppresses the effect of a target gene that impairs cellular function in the cell. In other embodiments, the methods are directed to identifying nucleic acids that encode polypeptides that phys. interact with one another.

L2 ANSWER 4 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2003:129351 CAPLUS
DOCUMENT NUMBER: 138:164733
TITLE: Improved Agrobacterium-mediated plant transformation by incorporating a lethal polynucleotide in non-T-DNA sequences derived from a T-DNA vector
INVENTOR(S): **Gutterson, Neal**; Hanson, William G.
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: U.S., 21 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6521458	B1	20030218	US 1999-302980	19990430

PRIORITY APPLN. INFO.: US 1998-86440P P 19980522

AB The present invention relates to the production of transformed plants in which only sequences between the right border and left border elements of Agrobacterium are obtained in selected plant cells. The invention provides methods for eliminating plants containing non-T-DNA sequences derived from a T-DNA vector. More specifically, the invention provides a method for killing plant cells that receive non-T-DNA sequences based on incorporation of a lethal polynucleotide sequence into the non-T-DNA portion of the vector. The methods comprise introducing into plant cells a T-DNA vector comprising a T-DNA sequence having a right border, a left border and the polynucleotide of interest positioned between the right border and the left border. Also included in the vector is a non-T-DNA sequence comprising a lethal polynucleotide sequence. Plant cells are then selected which comprise the T-DNA sequence and do not comprise the lethal polynucleotide sequence. The lethal polynucleotide can encode a lethal polypeptide (e.g., a RNase, such as Barnase) or encode a lethal mRNA transcript (e.g., a ribozyme or antisense RNA). The lethal polynucleotide may be altered to prevent expression in the Agrobacterium host. This can be accomplished, for instance, by including an intron in the coding region. The non-T-DNA sequence may further comprise a screenable marker and the method may further comprise detection of the screenable marker in the plant cells. A binary vector containing barnase-INT and LUC-INT outside the left border and a control vector with a non-functional barnase-INT gene are constructed. Agrobacterium-mediated transformation of tobacco and tomato using a lethal gene outside the left

border is described. It was shown that barnase function is directly responsible for the reduction in DNA outside the T-DNA being present in transformed tobacco and tomato plants.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 58 USPATFULL on STN
ACCESSION NUMBER: 2003:25146 USPATFULL
TITLE: Methods of gene silencing using inverted repeat sequences
INVENTOR(S): **Gutterson, Neal**, Oakland, CA, UNITED STATES
Oeller, Paul, Berkeley, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003018993	A1	20030123
APPLICATION INFO.:	US 2001-924197	A1	20010807 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-225508P	20000815 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
NUMBER OF CLAIMS: 53
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1382
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides methods for inhibiting target gene expression, by expressing in a cell a nucleic acid construct comprising an inverted repeat and a sense or antisense region having substantial sequence identity to a target gene, wherein the inverted repeat is unrelated to the target gene.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 6 OF 58 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 2003263353 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12789501
TITLE: Cost-effective in vitro propagation methods for pineapple.
AUTHOR: Firoozabady E; **Gutterson N**
CORPORATE SOURCE: DNA Plant Technology Corporation, CA 94608, Oakland, USA.. efiroozabady@freshdelmonte.com
SOURCE: Plant cell reports, (2003 Jun) 21 (9) 844-50. Journal code: 9880970. ISSN: 0721-7714.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200308
ENTRY DATE: Entered STN: 20030606
Last Updated on STN: 20030828
Entered Medline: 20030827
AB We have developed an efficient and cost-effective method for commercial micropropagation of Smooth Cayenne pineapple. In vitro shoots were used as starting materials, and either longitudinal sections of the shoots or leaf bases were used as the explants to regenerate shoots. When these explants were used, the axillary meristems, which usually remain quiescent during shoot multiplication, were able to form new shoots. Subsequent to the regeneration step, additional multiplication was achieved inside a 10-l Nalgene vessel with shoots immersed in liquid medium for 5-10 min/h (periodic immersion bioreactor, PIB). The shoots were then induced to form roots and transferred to soil. Using the above micropropagation

method and the PIB, we produced 6,000-8,000 shoots from two initial shoots in less than 6 months. The clonal fidelity of propagated plants was tested in Costa Rican and Indonesian pineapple farms.

L2 ANSWER 7 OF 58 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 2003097947 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12609050
TITLE: Inverted repeat of a heterologous 3'-untranslated region for high-efficiency, high-throughput gene silencing.
AUTHOR: Brummell David A; Balint-Kurti Peter J; Harpster Mark H; Palys Joseph M; Oeller Paul W; **Gutterson Neal**
CORPORATE SOURCE: DNA Plant Technology, 6701 San Pablo Avenue, Oakland, CA 94608, USA.. brummelld@crop.cri.nz
SOURCE: Plant journal : for cell and molecular biology, (2003 Feb) 33 (4) 793-800.
Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 20030302
Last Updated on STN: 20030516
Entered Medline: 20030515

AB This report describes a method for the easy generation of inverted repeat constructs for the silencing of genes of unknown sequence which is applicable to high-throughput studies. This improved procedure for high-efficiency gene silencing is specific for a target gene, but does not require inverted repeat DNA of the target gene in the construct. The method employs an inverted repeat of the 3'-untranslated region (3'-UTR) of a heterologous gene, and has been demonstrated using the 3'-UTR region of the nopaline synthase (nos) gene from Agrobacterium tumefaciens, which is often used as the 3'-UTR for transgene constructs. In a population of independent tomato primary transformants harboring a stably integrated polygalacturonase (PG) transgene driven by a constitutive promoter and linked to an inverted repeat of the nos 3'-UTR, 51 of 56 primary transformants (91% of the population) showed highly effective post-transcriptional silencing of the PG gene, with PG mRNA abundance in ripe fruit reduced by 98% or more. The method was also effective in Arabidopsis, where two different, relatively uncharacterized plant transcription factors were also targeted effectively. This method has the advantage of ease and rapidity in preparation of the constructs, since a gene of interest can be inserted into a binary vector already containing the promoter and the inverted nos domain in a single-cloning step, and does not require any knowledge of the DNA sequence. The approach is suitable for high-throughput gene silencing studies, where it is necessary to investigate the function of hundreds to thousands of uncharacterized genes.

L2 ANSWER 8 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 7
ACCESSION NUMBER: 2002:712927 CAPLUS
DOCUMENT NUMBER: 137:227611
TITLE: Methods to assay for post-transcriptional gene silencing (PTGS) in a plant cell using suppression-sensitive reporter (SSR) targeted to chosen gene
INVENTOR(S): Bedbrook, John R.; **Gutterson, Neal**; Oeller, Paul W.
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: U.S., 15 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6452067	B1	20020917	US 1998-156210	19980917

PRIORITY APPLN. INFO.: US 1997-59332P P 19970919

AB This invention provides methods for identifying plant cells that exhibit post-transcriptional gene silencing (PTGS) of a chosen gene. The methods involve the use of suppression-sensitive reporter (SSR) gene which is introduced into plant cell along with a targeting nucleotide sequence substantially identical to a region of a chosen gene. The SSR genes are expressed at a lower level in cells that exhibit PTGS than in cells that are not silenced for the particular gene. The invention also provides a method for detecting PTGS that involves, in addition to the use of an SSR gene, introducing into the plant cell a non-suppression sensitive reporter (NSR) gene. The NSR gene has a second reporter coding sequence which is different from the reporter coding sequence included in the SSR gene, and lacks a targeting nucleotide sequence. The level of expression of both the SSR gene and the NSR gene are determined By comparing the expression levels, one can quantitate the degree of PTGS. In another embodiment, the invention provides methods for detecting transgene-induced PTGS of a transgene in a plant cell, which involved the use of a SSR gene which comprises a targeting nucleotide sequence that is substantially identical to a region of the endogenous gene.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 9 OF 58 USPATFULL on STN DUPLICATE 8

ACCESSION NUMBER: 2002:116465 USPATFULL

TITLE: Two component plant cell lethality methods and compositions

INVENTOR(S): **Gutterson, Neal**, Oakland, CA, United States
Ralston, Ed, Pleasant Hill, CA, United States

PATENT ASSIGNEE(S): DNA Plant Technology Corporation, Oakland, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6392119	B1	20020521	
APPLICATION INFO.:	US 1998-12895		19980123	(9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-36483P	19970124 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Nelson, Amy J.
ASSISTANT EXAMINER: Zaghmout, Ousama M. F.
LEGAL REPRESENTATIVE: Townsend and Townsend and Crew LLP
NUMBER OF CLAIMS: 25
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT: 2152

AB The present invention is directed to methods for inhibiting the growth or killing cell in an organism, particularly plants. Genetically engineered cells and which allow for killing or provision of a beneficial effect to specified cells are also provided.

L2 ANSWER 10 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:142846 CAPLUS

DOCUMENT NUMBER: 136:178951

TITLE: Improved methods of gene silencing in plant using inverted repeat sequences from NOS gene

INVENTOR(S): **Gutterson, Neal**; Oeller, Paul

PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA

SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014472	A2	20020221	WO 2001-US25538	20010814
WO 2002014472	A3	20020718		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003018993	A1	20030123	US 2001-924197	20010807
AU 2001088257	A5	20020225	AU 2001-88257	20010814

PRIORITY APPLN. INFO.:
US 2000-225508P P 20000815
US 2001-924197 A 20010807
WO 2001-US25538 W 20010814

AB The present invention provides methods for inhibiting target gene expression, by expressing in a cell a nucleic acid construct comprising an inverted repeat and a sense or antisense region having substantial sequence identity to a target gene, wherein the inverted repeat is unrelated to the target gene. The inverted repeat is chosen from any suitable sequence and has the ability to form a double stranded RNA in the cell. N another preferred embodiment, the heterologous inverted repeat of the invention is from Agrobacteriumn tumefaciens NOS gene or from the 3' untranslated region of the NOS gene. In one embodiment, the improved gene silencing construct is expressed in a plant cell, where the transcript, or fragments thereof, is taken up by plant pathogens such as fungi, bacteria, nematodes, e.g., cyst and root knot nematodes, and insects, e.g., sucking insects, leading to gene silencing in the pathogen. In another embodiment, the improved gene silencing construct is expressed in a transgenic plant, and is used to regulate expression of the transgene. N another embodiment, the gene silencing vector is used to regulate expression of an endogenous plant gene, e.g., to regulate plant phenotypes such as disease resistance.

L2 ANSWER 11 OF 58 USPATFULL on STN
ACCESSION NUMBER: 2002:4728 USPATFULL
TITLE: Production of polyketides in plants
INVENTOR(S): Betlach, Mary C., San Francisco, CA, UNITED STATES
Kealey, James T., Davis, CA, UNITED STATES
Gutterson, Neal, Oakland, CA, UNITED STATES
Ralston, Ed, Pleasant Hill, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002002712	A1	20020103
APPLICATION INFO.:	US 2001-847089	A1	20010501 (9)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1998-114083, filed on 10 Jul 1998, GRANTED, Pat. No. US 6262340

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-52211P	19970710 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Kate H. Murashige, Morrison & Foerster LLP, Suite 500,

3811 Valley Centre Drive, San Diego, CA, 92130-2332
NUMBER OF CLAIMS: 33
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1406
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides genetically altered plants and plant cells that have been modified to contain expression system(s) capable of expressing a functional polyketide synthase (PKS). The present invention further provides methods of producing PKS and polyketides using these plants and cells.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 12 OF 58 MEDLINE on STN DUPLICATE 9
ACCESSION NUMBER: 2002357652 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12100487
TITLE: A novel, two-component system for cell lethality and its use in engineering nuclear male-sterility in plants.
AUTHOR: Burgess Diane G; Ralston Edward J; Hanson William G; Heckert Matthew; Ho Minh; Jenq Tina; Palys Joseph M; Tang Keliang; **Gutterson Neal**
CORPORATE SOURCE: DNA Plant Technologies, 6701 San Pablo Avenue, Oakland, CA 94608, USA.. diburgess2@attbi.com
SOURCE: Plant journal : for cell and molecular biology, (2002 Jul) 31 (1) 113-25.
Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200209
ENTRY DATE: Entered STN: 20020709
Last Updated on STN: 20020917
Entered Medline: 20020916
AB Ablation of cells by the controlled expression of a lethal gene can be used to engineer plant traits such as male sterility and disease resistance. However, it may not be possible to achieve sufficient specificity of expression to prevent secondary effects in non-targeted tissues. In this paper we demonstrate that the extracellular ribonuclease, barnase, can be engineered into two complementary fragments, allowing overlapping promoter specificity to be used to enhance targeting specificity. Using a transient system, we first show that barnase can be split into two inactive peptide fragments, that when co-expressed can complement each other to reconstitute barnase activity. When a luciferase reporter gene was introduced into plant cells along with genes encoding both partial barnase peptides, a substantial reduction in luciferase activity was seen. Cytotoxicity of the reconstituted barnase was demonstrated by crossing together parents constitutively expressing each of the barnase fragments, then assaying their progeny for the presence of both partial barnase genes. None of over 300 tomato seeds planted resulted in a viable progeny that inherited both transgenes. When expression of the partial barnase genes was instead targeted to the tapetum, male sterility resulted. All 13 tomato progeny that inherited both transgenes were male sterile, whereas the three progeny inheriting only the N-terminal barnase gene were male fertile. Finally, we describe how male sterility generated by this type of two-component system can be used in hybrid seed production.

L2 ANSWER 13 OF 58 LIFESCI COPYRIGHT 2004 CSA on STN
ACCESSION NUMBER: 2003:65193 LIFESCI
TITLE: Methods to assay for post-transcriptional suppression of gene expression
AUTHOR: Bedbrook, J.R.; **Gutterson, N.**; Oeller, P.W.
CORPORATE SOURCE: DNA Plant Technology Corporation

SOURCE: (20020917) . US Patent: 6452067; US CLASS: 800/278; 435/69.7; 435/468; 800/280; 800/286; 800/288; 800/294.
DOCUMENT TYPE: Patent
FILE SEGMENT: W2
LANGUAGE: English
SUMMARY LANGUAGE: English
AB This invention provides methods for identifying plant cells that exhibit post-transcriptional gene silencing (PTGS) of a chosen gene. The methods involve the use of suppression-sensitive reporter genes that, when introduced into plant cells, are expressed at a lower level in cells that exhibit PTGS than in cells that are not silenced for the particular gene.

L2 ANSWER 14 OF 58 USPATFULL on STN DUPLICATE 10
ACCESSION NUMBER: 2001:112604 USPATFULL
TITLE: Production of polyketides in plants
INVENTOR(S): Betlach, Mary C., San Francisco, CA, United States
Kealey, James T., Davis, CA, United States
Gutterson, Neal, Oakland, CA, United States
Ralston, Ed, Pleasant Hill, CA, United States
PATENT ASSIGNEE(S): Kosan Biosciences, Inc., Burlingame, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6262340	B1	20010717
APPLICATION INFO.:	US 1998-114083		19980710 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-52211P	19970710 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Hutzell, Paula K.
ASSISTANT EXAMINER: Zaghmout, Ousama
LEGAL REPRESENTATIVE: Morrison & Foerster, Kaster, Kevin, Murasurge, Kate
NUMBER OF CLAIMS: 65
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 1651
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides genetically altered plants and plant cells that have been modified to contain expression system(s) capable of expressing a functional polyketide synthase (PKS). The present invention further provides methods of producing PKS and polyketides using these plants and cells.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 15 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:396598 CAPLUS
DOCUMENT NUMBER: 135:15082
TITLE: Methods of inhibiting plant parasitic nematodes and insect pests by expression of nematode and insect specific double-stranded RNA in plants
INVENTOR(S): Tobias, Christian; Shah, Gowri; **Gutterson, Neal**
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2001037654	A2	20010531	WO 2000-US32210	20001122
WO 2001037654	A3	20020221		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 2001020470	A5	20010604	AU 2001-20470	20001122

PRIORITY APPLN. INFO.: US 1999-167307P P 19991124
WO 2000-US32210 W 20001122

AB The present invention provides methods for conferring parasitic nematode and insect pest resistance to plants, by expressing in a plant dsRNA having substantial sequence identity to an endogenous gene of the plant parasitic nematode or insect pest. Several gene fragments, including unc-17, nuo-1 and sec-1, were cloned from C.elegans, Meloidogyne incognita and/or Manduca sexta. DsRNA derived from these gene sequences were produced in transgenic plants and resistances of transgenic plants to M. incognita were analyzed.

L2 ANSWER 16 OF 58 USPATFULL on STN
ACCESSION NUMBER: 2001:105535 USPATFULL
TITLE: MATERIALS AND METHODS FOR HYBRID SEED PRODUCTION
INVENTOR(S): BURGESS, DIANE, BERKELEY, CA, United States
GUTTERSON, NEAL, OAKLAND, CA, United States
PATENT ASSIGNEE(S): DNA PLANT TECHNOLOGY CORPORATION (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2001007154	A1	20010705
APPLICATION INFO.:	US 1998-186775	A1	19981106 (9)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1998-12895, filed on 23 Jan 1998, PENDING

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-65989P	19971114 (60)
	US 1997-36483P	19970124 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TOWNSEND AND TOWNSEND AND CREW, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
NUMBER OF CLAIMS: 27
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 1049

AB The present invention is directed to methods for producing plants containing alternate expression cassettes at a single locus in the plant genome. The two expression cassettes encode polypeptides which, when present in the same cell, are lethal to the cell. In preferred embodiments, the plant cell is an anther cell and the plant is male sterile.

L2 ANSWER 17 OF 58 USPATFULL on STN DUPLICATE 11
ACCESSION NUMBER: 2000:138125 USPATFULL
TITLE: Method of genetically transforming banana plants
INVENTOR(S): Engler, Dean, Moraga, CA, United States
Gutterson, Neal, Oakland, CA, United States
Nisbet, Garry S., Woodley, United Kingdom
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, Oakland, CA, United

States (U.S. corporation)
Zeneca, Ltd., London, United Kingdom (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6133035		20001017
APPLICATION INFO.:	US 1997-895334		19970716 (8)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Bui, Phuong T.
LEGAL REPRESENTATIVE: Townsend and Townsend and Crew LLP
NUMBER OF CLAIMS: 25
EXEMPLARY CLAIM: 1
LINE COUNT: 882
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a method of producing a transformed banana plant (genus,Musa), in particular by tranforming embroygenic material, or the somatic embryos derived from a banana plant, through incubation with Agrobacterium cells carrying exogenous DNA sequence(s), and obtaining regenerated plants.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 18 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:842284 CAPLUS
DOCUMENT NUMBER: 134:15379
TITLE: Genes from Fragaria controlling flowering and their use in the alteration of flowering behavior
INVENTOR(S): Oeller, Paul; **Gutterson, Neal**
PATENT ASSIGNEE(S): Dna Plant Technology Corp., USA
SOURCE: PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000071722	A1	20001130	WO 2000-US14297	20000524

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-318789 A 19990525
AB Genes of strawberry species that are similar to genes from other plant species that are involved in regulating flower are cloned and characterized for use in altering patterns of flowering behavior. The genes were cloned by RT-PCR of strawberry inflorescence mRNA using degenerate primers derived from conserved regions of genes known to be involved in flowering. Preliminary cDNA clones were used as probes to obtain genomic clones.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 19 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 12
ACCESSION NUMBER: 1999:582689 CAPLUS
DOCUMENT NUMBER: 131:195456
TITLE: Genetic transformation of pineapple plant tissue with T-DNA containing genes conferring drought, insect,

nematode and disease resistance, and use of transformed tissue for regeneration of pineapple plant
INVENTOR(S): Firoozabady, Ebrahim; **Gutterson, Neal**
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: U.S., 14 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5952543	A	19990914	US 1998-28936	19980224
PRIORITY APPLN. INFO.:			US 1998-28936	19980224

AB The present invention is directed to methods for the genetic transformation of pineapple plant tissue with Agrobacterium tumefaciens. Specifically the methods comprise contacting the pineapple cell with a culture of A. tumefaciens comprising a T-DNA and selecting cells containing said T-DNA. The T-DNA includes a heterologous DNA segment operably linked to a constitutive, inducible or tissue specific promoter, such that the DNA segment is integrated into the genome of the pineapple cell. The DNA segment is selected from a group of genes encoding ACC synthase, ACC oxidase, malic enzyme, malic dehydrogenase, glucose oxidase, chitinase, defensin, expansin, hemicellulase, xyloglucan transglycosylase, or RNase, or from apetala, leafy, knotted-related, homeobox or Etr-related genes. The heterologous DNA segment may confer resistance to insects, drought, nematodes, viral disease, or bacterial disease. In some embodiments the pineapple cell contacted with A. tumefaciens is an embryonic cell or an embryonic callus cell. The present invention also provides for the regeneration of intact pineapple plants from the transformed tissue. In a preferred embodiment the pineapple tissue is from a pineapple leaf base or a stem section.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 20 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:77445 CAPLUS
DOCUMENT NUMBER: 130:134969
TITLE: Genetic transformation of banana plant embryos with Agrobacterium vectors
INVENTOR(S): Engler, Dean; **Gutterson, Neal**; Nisbet, Garry S.
PATENT ASSIGNEE(S): Zeneca Ltd., UK; DNA Plant Technology Corp.
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9903327	A1	19990128	WO 1998-US14661	19980713
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6133035	A	20001017	US 1997-895334	19970716
AU 9884878	A1	19990210	AU 1998-84878	19980713
AU 744496	B2	20020228		

EP 996329 A1 20000503 EP 1998-935691 19980713
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
JP 2001510021 T2 20010731 JP 2000-502651 19980713
PRIORITY APPLN. INFO.: US 1997-895334 A 19970716
WO 1998-US14661 W 19980713

AB A method of transforming banana (genus, Musa) is disclosed, in particular by transforming embryogenic material, or the somatic embryos derived therefrom, through incubation with Agrobacterium cells carrying exogenous DNA sequence(s), and obtaining regenerated plants therefrom.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 21 OF 58 MEDLINE on STN DUPLICATE 13
ACCESSION NUMBER: 2000040043 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10571858
TITLE: A simple method to enrich an Agrobacterium-transformed population for plants containing only T-DNA sequences.
AUTHOR: Hanson B; Engler D; Moy Y; Newman B; Ralston E; **Gutterson N**
CORPORATE SOURCE: DNA Plant Technologies, Oakland, CA 94608, USA.
SOURCE: Plant journal : for cell and molecular biology, (1999 Sep) 19 (6) 727-34.
Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200003
ENTRY DATE: Entered STN: 20000330
Last Updated on STN: 20000330
Entered Medline: 20000321

AB A simple modification to standard binary vector design has been utilized to enrich an Agrobacterium-transformed population for plants containing only T-DNA sequences. A lethal gene was incorporated into the non-T-DNA portion of a binary vector, along with a screenable marker. The resulting class of vectors is designated as NTL T-DNA vectors (non-T-DNA lethal gene-containing T-DNA vectors). The lethal gene used here is a CaMV 35S-barnase gene with an intron in the coding sequence (barnase-INT); the screenable marker is a pMAS-luciferase gene with an intron in the coding sequence (LUC-int). To evaluate the utility of this vector design, tobacco plants were transformed with either the NTL T-DNA vector or a control vector from which most of the barnase-INT gene was deleted. Populations of 50 transgenic plants were scored for LUC expression. The results indicated a dramatic reduction in the presence of non-T-DNA sequences in the transgenic population using the NTL T-DNA vector. Only one transgenic plant was found to be LUC+ using the NTL vector, compared with 42 of 50 plants using the control vector. Importantly, the efficiency with which transformed tobacco plants was obtained was reduced by no more than 30%. The reduction in LUC+ transgenics was partially reversed when a barstar-expressing tobacco line was transformed, indicating that barnase expression was responsible for the reduced frequency of incorporating non-T-DNA sequences. Similar transformation results were obtained with tomato and grape. The incorporation of a barnase-INT gene outside the left border appears to provide a generally applicable tool for enriching an Agrobacterium-transformed population for plants containing only T-DNA sequences.

L2 ANSWER 22 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:603172 CAPLUS
DOCUMENT NUMBER: 129:185088
TITLE: Genetically transformed pineapple plants and methods for their production
INVENTOR(S): Firoozabady, Ebrahim; **Gutterson, Neal**
PATENT ASSIGNEE(S): DNA Plant Technology Corp., USA

SOURCE: PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9836637	A1	19980827	WO 1998-US3681	19980225
W: AU, CA, ID, JP, KE				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9863389	A1	19980909	AU 1998-63389	19980225
AU 740294	B2	20011101		

PRIORITY APPLN. INFO.: US 1997-39092P P 19970225
WO 1998-US3681 W 19980225

AB The present invention is directed to methods for the genetic transformation of pineapple plant tissue with Agrobacterium. The methods comprise contacting the pineapple cell with a culture of Agrobacterium comprising a T-DNA and selecting cells that contain the T-DNA. The T-DNA includes a DNA segment operably linked to a promoter and functional in the pineapple cells, such that the DNA segment is integrated into the genome of the pineapple cells. The DNA segment can comprise a gene, a gene fragment, or a combination of genes. The pineapple is preferably Smooth Cayenne, and Agrobacterium is preferably A. tumefaciens. The present invention also provides for the regeneration of intact pineapple plants from the transformed tissue. Generally, the pineapple tissue at the young shoot stage (from transformed embryogenic cells) is cultured on a medium comprising an effective amount of a strong auxin such as picloram.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 23 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1998:375566 BIOSIS
DOCUMENT NUMBER: PREV199800375566
TITLE: Improvement of transformation and regeneration in papaya.
AUTHOR(S): Firoozabady, E.; Moy, Y.; Oeller, P.; **Gutterson, N.**
CORPORATE SOURCE: DNA Plant Technol., 6701 San Pablo Ave., Oakland, CA 94608, USA
SOURCE: In Vitro Cellular and Developmental Biology Animal, (March, 1998) Vol. 34, No. 3 PART 2, pp. 47A. print.
Meeting Info.: 1998 Meeting of the Society for In Vitro Biology. Las Vegas, Nevada, USA. May 30-June 4, 1998. Society for In Vitro Biology.
ISSN: 1071-2690.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 2 Sep 1998
Last Updated on STN: 2 Sep 1998

L2 ANSWER 24 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:34084 CAPLUS
DOCUMENT NUMBER: 126:55944
TITLE: Carnation genetic engineering to reduce expression of ACC synthase and ACC oxidase enzymes of ethylene biosynthetic pathway prolongs flower post-harvest life
INVENTOR(S): Michael, Michael Zenon; Graham, Michael Wayne; Cornish, Edwina Cecily; **Gutterson, Neal Ira**; Tucker, William Tinsley
PATENT ASSIGNEE(S): Allrad No. 1 Pty. Ltd., Australia; Florigene Investments Pty. Ltd.; Michael, Michael Zenon; Graham, Michael Wayne; Cornish, Edwina Cecily; Gutterson, Neal Ira; Tucker, William Tinsley

SOURCE: PCT Int. Appl., 98 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9635792	A1	19961114	WO 1996-AU286	19960509
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
AU 9654930	A1	19961129	AU 1996-54930	19960509
AU 703841	B2	19990401		
EP 824591	A1	19980225	EP 1996-911869	19960509
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
JP 11504815	T2	19990511	JP 1996-533608	19960509

PRIORITY APPLN. INFO.: AU 1995-2862 19950509
WO 1996-AU286 19960509

AB The present invention relates generally to transgenic plants which exhibit prolonged post-harvest life properties. More particularly, the present invention is directed to transgenic carnation plants modified to reduce expression of one or more enzymes associated with the ethylene biosynthetic pathway. Flowers of such carnation plants do not produce ethylene, or produce ethylene in reduced amts., and are, therefore, capable of surviving longer post-harvest than flowers of non-genetically modified, naturally-occurring carnation plants.

L2 ANSWER 25 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 14
ACCESSION NUMBER: 1995:830571 CAPLUS
DOCUMENT NUMBER: 123:310242
TITLE: Anthocyanin biosynthetic genes and their application to flower color modification through sense suppression
AUTHOR(S): **Gutterson, Neal**
CORPORATE SOURCE: DNA Plant Technology Corporation, Oakland, CA, 94608, USA
SOURCE: HortScience (1995), 30(5), 964-6
CODEN: HJHSAR; ISSN: 0018-5345
PUBLISHER: American Society for Horticultural Science
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review and discussion with 11 refs. The utility of sense suppression of anthocyanin biosynthetic genes to modify flower color has been demonstrated with chalcone synthase. This approach has been fairly predictable, with a range of possible flower colors being produced due to the quant. nature of suppression. Because virtually all of the main anthocyanin biosynthetic pathway genes have been isolated now from more than one plant source, broad application of this approach is possible. It should be possible to identify an appropriate gene for specific color change, to isolate the gene based on sequence conservation, and to produce plants altered for expression of the gene and flower color. This approach to modifying flower color offers a useful alternative, or adjunct, to conventional breeding.

L2 ANSWER 26 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 15
ACCESSION NUMBER: 1995:964133 CAPLUS
DOCUMENT NUMBER: 124:1853
TITLE: Efficient transformation and regeneration of carnation cultivars using Agrobacterium
AUTHOR(S): Firoozabady, E.; Moy, Y.; Tucker, W.; Robinson, K.;

Gutterson, N.
CORPORATE SOURCE: DNA Plant Technology Corporation, Oakland, CA, 94608-1239, USA
SOURCE: Molecular Breeding (1995), 1(3), 283-93
CODEN: MOBRFL; ISSN: 1380-3743
PUBLISHER: Kluwer
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have developed an efficient method for transformation and regeneration of plants from carnation, Dianthus caryophyllus L. Whole leaves from in vitro shoot cultures were mixed with Agrobacterium, cocultivated for 5 days and then plated on 2 μg/L chlorsulfuron (CS). Regenerated shoots and shoot clusters were divided into smaller sections and plated on 3 μg/L CS for selection to produce fully transformed shoots. Geneticin (G418) and kanamycin used were not as effective selective agents as CS. All regenerated shoots were vitrified. These were normalized, rooted and transferred to the greenhouse. 100% Of regenerated plants were transformed based on rooting assay, GUS assay, PCR and Southern anal.

L2 ANSWER 27 OF 58 USPATFULL on STN
ACCESSION NUMBER: 93:12421 USPATFULL
TITLE: Transducing particles and methods for their production
INVENTOR(S): **Gutterson, Neal I.**, Oakland, CA, United States
Tucker, William T., Oakland, CA, United States
Wolber, Paul K., Hayward, CA, United States
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, Oakland, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5187061		19930216
APPLICATION INFO.:	US 1990-609331		19901105 (7)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1990-474282, filed on 5 Feb 1990 which is a continuation-in-part of Ser. No. US 1988-253160, filed on 4 Oct 1988, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Schwartz, Richard A.
ASSISTANT EXAMINER: Carter, Philip W.
LEGAL REPRESENTATIVE: Townsend and Townsend
NUMBER OF CLAIMS: 35
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 4 Drawing Page(s)
LINE COUNT: 1854
AB Viable bacteria may be detected in biological samples by exposing bacterial cultures obtained from the samples to transducing particles having a known host range. Such transducing particles carry a heterologous gene capable of altering the phenotype of the bacteria in a readily detectable manner. For example, the transducing particles may carry an ice nucleation gene and the alteration of phenotype may be detected using an ice nucleation assay. By employing a panel of phage, unknown bacteria nmay be typed based on the pattern of reactivity observed. The transducing particles may be prepared by introducing a synthetic transposable element carrying the heterologous gene to a host carrying a prophage having the desired host range. After transposition, the host may be induced to a lytic cycle to release the transducing particles carrying the heterologous gene.

L2 ANSWER 28 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 16
ACCESSION NUMBER: 1993:621528 CAPLUS
DOCUMENT NUMBER: 119:221528
TITLE: Molecular breeding for color, flavor and fragrance
AUTHOR(S): **Gutterson, Neal Courtney**

CORPORATE SOURCE: DNA Plant Technol. Corp., Oakland, CA, 94608, USA
SOURCE: Scientia Horticulturae (Amsterdam, Netherlands) (1993), 55(1-2), 141-60
CODEN: SHRTAH; ISSN: 0304-4238
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with many refs. Pathways for biosynthesis of anthocyanin and carotenoid pigments have been studied in a number of plants, and some genes have been isolated which encode individual enzymes of the pathways. Some of these genes have now been used to manipulate color in flowers and fruit, either by blocking pigment synthesis, or by causing pigments not normally found in a crop species to be produced. No example yet exists for pathway manipulation of a fragrance or flavor chemical The key limitation to mol. breeding is now the lack of the biochem. understanding of any particular trait.

L2 ANSWER 29 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 17
ACCESSION NUMBER: 1992:249892 CAPLUS
DOCUMENT NUMBER: 116:249892
TITLE: Introduction of heterologous genes into bacteria using transposon-flanked expression cassette and a binary vector system
INVENTOR(S): Tucker, William T.; **Gutterson, Neal I.**
PATENT ASSIGNEE(S): DNA Plant Technology Corp., USA
SOURCE: U.S., 16 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5102797	A	19920407	US 1989-357492	19890526

PRIORITY APPLN. INFO.: US 1989-357492 19890526

AB A method for integration of heterologous genes into bacterial genomes is described. The method involves the homologous recombination of a carrier plasmid and a functions plasmid to form a combined plasmid. The carrier plasmid contains a transposable element which flanks a generic expression cassette. The functions plasmid contains transposase genes which complement the transposable element on the carrier plasmid. The combined plasmid is then transferred to a recipient and the recipient is monitored for integration of the expression cassette into the gene. The recombination event which occurs to produce the combined plasmid occurs between overlapping segments of a selectable marker such that recombination results in the construction of a functional selectable marker. The method was employed to introduce the inaW gene into the genome of Pseudomonas fluorescens. The combined plasmid, containing elements of Tn7, was prepared by homologous recombination in Escherichia coli and transferred to P. fluorescens by conjugation.

L2 ANSWER 30 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1990:297903 BIOSIS
DOCUMENT NUMBER: PREV199039016084; BR39:16084
TITLE: ENHANCING EFFICIENCIES OF BIOCONTROL AGENTS BY USE OF BIOTECHNOLOGY.
AUTHOR(S): **GUTTERSON N** [Reprint author]; HOWIE W; SUSLOW T
CORPORATE SOURCE: DNA PLANT TECHNOL CORP, 6701 SAN PABLO AVE, OAKLAND, CALIF 94608, USA
SOURCE: UCLA Symp. Mol. Cell. Biol., New Ser., (1990) pp. 749-766. BAKER, R. R. AND P. E. DUNN (ED.). UCLA (UNIVERSITY OF CALIFORNIA-LOS ANGELES) SYMPOSIA ON MOLECULAR AND CELLULAR BIOLOGY NEW SERIES, VOL. 112. NEW DIRECTIONS IN BIOLOGICAL CONTROL: ALTERNATIVES FOR SUPPRESSING AGRICULTURAL PESTS AND DISEASES; COLLOQUIUM, FRISCO, COLORADO, USA, JANUARY

20-27, 1989. XXII+837P. ALAN R. LISS, INC.: NEW YORK, NEW YORK, USA. ILLUS.
Publisher: Series: UCLA (University of California Los Angeles) Symposia on Molecular and Cellular Biology New Series.
CODEN: USMBD6. ISSN: 0735-9543. ISBN: 0-471-56681-0.
DOCUMENT TYPE: Book
Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 27 Jun 1990
Last Updated on STN: 27 Jun 1990

L2 ANSWER 31 OF 58 LIFESCI COPYRIGHT 2004 CSA on STN DUPLICATE 18
ACCESSION NUMBER: 90:42438 LIFESCI
TITLE: Osmotolerance-minus mutants of Pseudomonas putida strain MK280 are not impaired in cotton spermosphere and rhizosphere colonization.
AUTHOR: Howie, W.J.; **Gutterson, N.I.**; Suslow, T.V.
CORPORATE SOURCE: DNA Plant Technologies, Inc., 6701 San Pablo Ave., Oakland, CA 94608, USA
SOURCE: SOIL BIOL. BIOCHEM., (1990) vol. 22, no. 6, pp. 839-844.
DOCUMENT TYPE: Journal
FILE SEGMENT: J; A; W; D
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Strain MK280 of Pseudomonas putida was treated with MMNG to obtain mutants sensitive to an osmotic potential of -1.0 MPa (selected by supplementing a minimal medium with NaCl, Na sub(2)SO sub(4), KCl or sorbitol). There were no significant differences between the populations of MK280 applied onto seeds and its osmosensitive mutant (NP179) after bacterial suspensions were dried onto cotton seeds. Likewise, osmotolerance did not correlate with short-term rhizosphere colonization since population density of strain NP179 on roots were not significantly different from strain MK280 when cotton was grown in non-autoclaved or autoclaved soil at a low matric potential (-0.18 MPa). Strain B10-13b (a Pseudomonas fluorescens) strain for which low rhizosphere colonization potential had been previously correlated with osmosensitivity) colonized the spermosphere and rhizosphere as well as strain MK280 and NP179 when cotton was grown in autoclaved soil.

L2 ANSWER 32 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1990:420564 CAPLUS
DOCUMENT NUMBER: 113:20564
TITLE: Enhancing efficiencies of biocontrol agents by use of biotechnology
AUTHOR(S): **Gutterson, Neal**; Howie, William; Suslow, Trevor
CORPORATE SOURCE: DNA Plant Technol. Corp., Oakland, CA, 94608, USA
SOURCE: UCLA Symposia on Molecular and Cellular Biology, New Series (1990), 112(New Dir. Biol. Control), 749-65
CODEN: USMBD6; ISSN: 0735-9543
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 42 refs. on the use of biotechnol. in approaches to find genes required for biol. control; biocontrol of soil-borne fungal pathogens by fluorescent pseudomonads is considered.

L2 ANSWER 33 OF 58 LIFESCI COPYRIGHT 2004 CSA on STN DUPLICATE 19
ACCESSION NUMBER: 90:47972 LIFESCI
TITLE: Microbial fungicides: Recent approaches to elucidating mechanisms.
AUTHOR: **Gutterson, N.**
CORPORATE SOURCE: Microb. Genet. Group, DNA Plant Technologies Corp., Oakland, CA 94615, USA

SOURCE: CRC CRIT. REV. BIOTECHNOL., (1990) vol. 10, no. 1, pp. 69-82.
DOCUMENT TYPE: Journal
TREATMENT CODE: General Review
FILE SEGMENT: K; A; W
LANGUAGE: English
AB This review discusses those microbes which are able to control fungal diseases of plants, generally referred to as microbial fungicides. The focus is on developments with bacterial biocontrol agents (principally fluorescent pseudomonads), with a brief discussion of relevant work with Trichoderma spp. Although it is not usually known whether these agents actually act biocidally, they have been grouped into the category of microbial fungicides based on past usage with chemicals. We can define a microbial fungicide, then, as any microbe which can be applied to a plant surface and which reduces the incidence or severity of a fungal disease. It reviews work done with a mechanistic focus, limiting discussion of work that may be categorized as system development, or that is phenomenological.

L2 ANSWER 34 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1990:37329 BIOSIS
DOCUMENT NUMBER: PREV199038016559; BR38:16559
TITLE: CHARACTERIZATION OF ANTIBIOTIC BIOSYNTHESIS LOCI OF PSEUDOMONAS-FLUORESCENS HV37A.
AUTHOR(S): LEONG D [Reprint author]; **GUTTERSON N**
CORPORATE SOURCE: ADV GENET SCI, OAKLAND, CALIF, USA
SOURCE: (1989) pp. 367. HERSHBERGER, C. L., S. W. QUEENER AND G. HEGEMAN (ED.). GENETICS AND MOLECULAR BIOLOGY OF INDUSTRIAL MICROORGANISMS; FOURTH ASM (AMERICAN SOCIETY FOR MICROBIOLOGY) CONFERENCE, BLOOMINGTON, INDIANA, USA, 1988. IX+377P. AMERICAN SOCIETY FOR MICROBIOLOGY: WASHINGTON, D.C., USA. ILLUS.
ISBN: 1-55581-010-1.
DOCUMENT TYPE: Book
Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 28 Dec 1989
Last Updated on STN: 28 Dec 1989

L2 ANSWER 35 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1990:123440 BIOSIS
DOCUMENT NUMBER: PREV199038057650; BR38:57650
TITLE: DIRECTED ENHANCEMENT OF BIOCONTROL IN PSEUDOMONAS BY CONSTITUTIVE ANTIBIOTIC BIOSYNTHESIS.
AUTHOR(S): HOWIE W [Reprint author]; MATSUBARA D; **GUTTERSON N**; SUSLOW T
CORPORATE SOURCE: DNA PLANT TECHNOL CORPORATION, OAKLAND, CALIF 94608, USA
SOURCE: Phytopathology, (1989) Vol. 79, No. 10, pp. 1160.
Meeting Info.: ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY, RICHMOND, VIRGINIA, USA, AUGUST 20-24, 1989. PHYTOPATHOLOGY.
CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 27 Feb 1990
Last Updated on STN: 27 Feb 1990

L2 ANSWER 36 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1989:214576 BIOSIS
DOCUMENT NUMBER: PREV198936103790; BR36:103790
TITLE: ENHANCING EFFICIENCIES OF BIOCONTROL AGENTS BY USE OF BIOTECHNOLOGY.
AUTHOR(S): **GUTTERSON N** [Reprint author]

CORPORATE SOURCE: ADV GENET SCI, 6701 SAN PABLO AVE, OAKLAND, CALIF 94608, USA
SOURCE: Journal of Cellular Biochemistry Supplement, (1989) No. 13 PART A, pp. 161.
Meeting Info.: SYMPOSIUM ON NEW DIRECTIONS IN BIOLOGICAL CONTROL HELD AT THE 18TH ANNUAL UCLA (UNIVERSITY OF CALIFORNIA-LOS ANGELES) SYMPOSIA ON MOLECULAR AND CELLULAR BIOLOGY, FRISCO, COLORADO, USA, JANUARY 20-27, 1989. J CELL BIOCHEM (SUPPL).
ISSN: 0733-1959.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 26 Apr 1989
Last Updated on STN: 26 Apr 1989

L2 ANSWER 37 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1989:217180 BIOSIS
DOCUMENT NUMBER: PREV198936106394; BR36:106394
TITLE: ISOLATION OF GENES FOR THE BIOSYNTHESIS OF FUSAROMYCIN A AN ANTIBIOTIC ACTIVE AGAINST FUSARIUM AND THIELAVIOPSIS.
AUTHOR(S): TUCKER W T [Reprint author]; ABBENE S J; **GUTTERSON N**
CORPORATE SOURCE: ADV GENET SCI INC, 6701 SAN PABLO AVE, OAKLAND, CA 94608, USA
SOURCE: Phytopathology, (1988) Vol. 78, No. 12 PART 1, pp. 1587.
Meeting Info.: ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY AND THE PACIFIC DIVISION, SAN DIEGO, CALIFORNIA, USA, NOVEMBER 13-17, 1988.
PHYTOPATHOLOGY.
CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 26 Apr 1989
Last Updated on STN: 26 Apr 1989

L2 ANSWER 38 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1989:216958 BIOSIS
DOCUMENT NUMBER: PREV198936106172; BR36:106172
TITLE: INDIRECT EVIDENCE FOR OOMYCIN A EXPRESSION IN SITU EFFECT OF SOIL TEMPERATURE MOISTURE AND TEXTURE.
AUTHOR(S): HOWIE W [Reprint author]; CORRELL M; **GUTTERSON N**; SUSLOW T
CORPORATE SOURCE: ADVANCED GENETIC SCI, 6701 SAN PABLO AVE, OAKLAND, CALIF 94608, USA
SOURCE: Phytopathology, (1988) Vol. 78, No. 12 PART 1, pp. 1558.
Meeting Info.: ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY AND THE PACIFIC DIVISION, SAN DIEGO, CALIFORNIA, USA, NOVEMBER 13-17, 1988.
PHYTOPATHOLOGY.
CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 26 Apr 1989
Last Updated on STN: 26 Apr 1989

L2 ANSWER 39 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1989:216781 BIOSIS
DOCUMENT NUMBER: PREV198936105995; BR36:105995
TITLE: CLONING OF ADDITIONAL GENES FROM OOMYCIN A BIOSYNTHESIS IN PSEUDOMONAS-FLUORESCENS STRAIN HV37A.
AUTHOR(S): **GUTTERSON N** [Reprint author]; GREISEN K S; LEONG D U

CORPORATE SOURCE: ADV GENET SCI, 6701 SAN PABLO AVE, OAKLAND, CALIF 94608, USA
SOURCE: Phytopathology, (1988) Vol. 78, No. 12 PART 1, pp. 1535. Meeting Info.: ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY AND THE PACIFIC DIVISION, SAN DIEGO, CALIFORNIA, USA, NOVEMBER 13-17, 1988. PHYTOPATHOLOGY. CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 26 Apr 1989
Last Updated on STN: 26 Apr 1989

L2 ANSWER 40 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1989:216784 BIOSIS
DOCUMENT NUMBER: PREV198936105998; BR36:105998
TITLE: CHARACTERIZATION OF THE ANTIBIOTIC BIOSYNTHESIS LOCUS AFUE OF PSEUDOMONAS-FLUORESCENS STRAIN HV37A.
AUTHOR(S): LEONG D U [Reprint author]; **GUTTERSON N**
CORPORATE SOURCE: ADV GENET SCI INC, 6701 SAN PABLO AVE, OAKLAND, CALIF 94608, USA
SOURCE: Phytopathology, (1988) Vol. 78, No. 12 PART 1, pp. 1535. Meeting Info.: ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY AND THE PACIFIC DIVISION, SAN DIEGO, CALIFORNIA, USA, NOVEMBER 13-17, 1988. PHYTOPATHOLOGY. CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 26 Apr 1989
Last Updated on STN: 26 Apr 1989

L2 ANSWER 41 OF 58 MEDLINE on STN DUPLICATE 20
ACCESSION NUMBER: 88086898 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3121589
TITLE: Genetic determinants for catabolite induction of antibiotic biosynthesis in Pseudomonas fluorescens HV37a.
AUTHOR: **Gutterson N**; Ziegle J S; Warren G J; Layton T J
CORPORATE SOURCE: Advanced Genetic Sciences, Oakland, California 94608.
SOURCE: Journal of bacteriology, (1988 Jan) 170 (1) 380-5. Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198802
ENTRY DATE: Entered STN: 19900305
Last Updated on STN: 19900305
Entered Medline: 19880210

AB Antibiotic biosynthesis is regulated by glucose in Pseudomonas fluorescens HV37a. Fusions between antibiotic biosynthetic operons (afu operons) and the Escherichia coli lac operon were isolated to evaluate the genetic determinants for the regulation of antibiotic biosynthesis. Four afu transcriptional units were defined, afuE, afuR, afuAB, and afuP. The afuE and afuR transcripts were promoted divergently at one locus and were catabolite induced, by 250-fold and 5-fold, respectively; the afuAB and afuP transcriptional units were not linked to the others and were not catabolite induced. Thus, regulation of afuE and afuR operon transcription is apparently the mechanism whereby glucose regulates antibiotic biosynthesis. Catabolite induction of the afuE and afuR transcriptional unit was dependent on the products of the afuA, afuB, and afuP genes. Expression of the afuE transcriptional unit was altered quantitatively in afuE mutants. Apparently the afuE transcriptional unit

is regulated, at least in part, by its own gene products. Under inducing conditions, expression of the afuE, afuR, and afuP transcriptional units increased rapidly during a 6-h period.

L2 ANSWER 42 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1988:276383 BIOSIS
DOCUMENT NUMBER: PREV198835004697; BR35:4697
TITLE: APPLICATIONS AND TECHNIQUES FOR DEFICIENCY-MARKER EXCHANGE IN PSEUDOMONAS.
AUTHOR(S): WARREN G [Reprint author]; GILL P; **GUTTERSON N**; COROTTO L; GREEN R
CORPORATE SOURCE: ADV GENET SCI INC, 6701 SAN PABLO, OAKLAND, CALIF 94608, USA
SOURCE: (1987) pp. 1033-1039. CIVEROLO, E. L., ET AL. (ED.). CURRENT PLANT SCIENCE AND BIOTECHNOLOGY IN AGRICULTURE: PLANT PATHOGENIC BACTERIA; SIXTH INTERNATIONAL CONFERENCE, COLLEGE PARK, MARYLAND, USA, JUNE 2-7, 1985. XXIII+1050P. KLUWER ACADEMIC PUBLISHERS GROUP: DORDRECHT, NETHERLANDS; BOSTON, MASSACHUSETTS, USA. ILLUS.
ISBN: 90-247-3476-2.
DOCUMENT TYPE: Book
Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 7 Jun 1988
Last Updated on STN: 7 Jun 1988

L2 ANSWER 43 OF 58 MEDLINE on STN DUPLICATE 21
ACCESSION NUMBER: 88185833 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2833429
TITLE: An efficient mobilizable cosmid vector, pRK7813, and its use in a rapid method for marker exchange in Pseudomonas fluorescens strain HV37a.
AUTHOR: Jones J D; **Gutterson N**
CORPORATE SOURCE: Advanced Genetic Sciences Inc., Oakland, CA 94608.
SOURCE: Gene, (1987) 61 (3) 299-306.
Journal code: 7706761. ISSN: 0378-1119.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198805
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 19990129
Entered Medline: 19880524
AB We describe the construction and utilization of a new mobilizable cosmid vector. Using this vector, mobilizable libraries of bacterial DNA can be efficiently made without a need for size fractionation of target DNA. The low stability of this vector in Pseudomonas fluorescens makes it useful in a rapid strategy, which is not dependent on plasmid incompatibility, for recombining transposon-induced mutations into the bacterial chromosome.

L2 ANSWER 44 OF 58 MEDLINE on STN DUPLICATE 22
ACCESSION NUMBER: 87074849 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3098168
TITLE: Multiple antibiotics produced by Pseudomonas fluorescens HV37a and their differential regulation by glucose.
AUTHOR: James D W Jr; **Gutterson N I**
SOURCE: Applied and environmental microbiology, (1986 Nov) 52 (5) 1183-9.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 198701
ENTRY DATE: Entered STN: 19900302
Last Updated on STN: 19900302
Entered Medline: 19870112

AB Pseudomonas fluorescens HV37a inhibited growth of the fungus Pythium ultimum on potato dextrose agar (PDA). An antibiotic activity produced under these conditions was fractionated and partially characterized. Extracts prepared from the PDA on which HV37a was grown revealed a single peak of antibiotic activity on thin-layer chromatograms. Similar extracts were prepared from mutants of HV37a. Their analysis indicated that the antibiotic observed in thin-layer chromatograms was responsible for fungal inhibition observed on PDA. The production of the PDA antibiotic required the presence of glucose, whereas two other antibiotic activities were produced only on potato agar without added glucose. Two mutants (denoted AfuIa and AfuIb) previously characterized as deficient in fungal inhibition on PDA showed altered regulation of the production of all three antibiotics in response to glucose. These mutants were also deficient in glucose dehydrogenase. Mutants isolated as deficient in glucose dehydrogenase were also deficient in fungal inhibition and were grouped into two classes on the basis of complementation analysis with an AfuI cosmid. Glucose regulation of antibiotic biosynthesis therefore involves at least two components and requires glucose dehydrogenase.

L2 ANSWER 45 OF 58 EMBASE
on STN
ACCESSION NUMBER: 87004556 EMBASE
DOCUMENT NUMBER: 1987004556
TITLE: Multiple antibiotics produced by Pseudomonas fluorescens HV37a and their differential regulation by glucose.
AUTHOR: James Jr. D.W.; **Gutterson N.I.**
CORPORATE SOURCE: Advances Genetic Sciences, Inc., Oakland, CA 94608, United States
SOURCE: Applied and Environmental Microbiology, (1986) 52/5 (1183-1189).
CODEN: AEMIDF
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 037 Drug Literature Index
004 Microbiology
LANGUAGE: English

L2 ANSWER 46 OF 58 BIOSIS on STN
ACCESSION NUMBER: 1987:100678 BIOSIS
DOCUMENT NUMBER: PREV198732050479; BR32:50479
TITLE: THE INFLUENCE OF OSMO-SENSITIVITY ON SEED AND ROOT COLONIZATION OF COTTON BY FLUORESCENT PSEUDOMONADS.
AUTHOR(S): HOWIE W [Reprint author]; SUSLOW T; **GUTTERSON N**
CORPORATE SOURCE: ADVANCED GENETIC SCI, 6701 SAN PABLO AVE, OAKLAND, CALIF, USA
SOURCE: Phytopathology, (1986) Vol. 76, No. 10, pp. 1077.
Meeting Info.: 1986 ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY AND OF THE CARIBBEAN AND SOUTHERN DIVISIONS, KISSIMMEE, FLORIDA, USA, AUGUST 10-14, 1986.
PHYTOPATHOLOGY.
CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 14 Feb 1987
Last Updated on STN: 14 Feb 1987

L2 ANSWER 47 OF 58 MEDLINE on STN DUPLICATE 23
ACCESSION NUMBER: 86139876 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3005234
TITLE: Molecular cloning of genetic determinants for inhibition of

fungal growth by a fluorescent pseudomonad.
AUTHOR: **Gutterson N I**; Layton T J; Ziegle J S; Warren G J
SOURCE: Journal of bacteriology, (1986 Mar) 165 (3) 696-703.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198604
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19990129
Entered Medline: 19860409

AB Pseudomonas fluorescens HV37a inhibits growth of the fungus Pythium ultimum in vitro. Optimal inhibition is observed on potato dextrose agar, a rich medium. Mutations eliminating fungal inhibition were obtained after mutagenesis with N-methyl-N'-nitro-N-nitrosoguanidine. Mutants were classified by cosynthesis and three groups were distinguished, indicating that a minimum of three genes are required for fungal inhibition. Cosmids that contain wild-type alleles of the genes were identified in an HV37a genomic library by complementation of the respective mutants. This analysis indicated that three distinct genomic regions were required for fungal inhibition. The cosmids containing these loci were mapped by transposon insertion mutagenesis. Two of the cosmids were found to contain at least two genes each. Therefore, at least five genes in HV37a function as determinants of fungal inhibition.

L2 ANSWER 48 OF 58 LIFESCI COPYRIGHT 2004 CSA on STN DUPLICATE 24
ACCESSION NUMBER: 85:33949 LIFESCI
TITLE: Role of antibiotic biosynthesis in rhizosphere disease control: Genetic analysis of antibiotic biosynthesis in a Pseudomonas fluorescens strain.
AUTHOR: **Gutterson, N.I.**; Ziegle, J.S.; Layton, T.J.; Warren, G.J.
CORPORATE SOURCE: Advanced Genetic Sciences, Inc., 6701 San Pablo Ave., Oakland, CA 94608, USA
SOURCE: PHYTOPATHOLOGY., (1985) vol. 75, no. 11, p. 1343. Abstract only..
Meeting Info.: Annual Meeting of the American Phytopathological Society. Reno, NV (USA). 11-15 Aug 1985.
DOCUMENT TYPE: Journal
TREATMENT CODE: Conference; Abstract
FILE SEGMENT: W
LANGUAGE: English

AB A number of fluorescent pseudomonads isolated from the rhizosphere protect plants against infection by root pathogens and secrete antibiotics. The role of antibiotic biosynthesis in disease protection has not been tested rigorously. To perform such a test, mutants isogenic to the wild type strain must be constructed. A fluorescent pseudomonad, HV37a, produces antibiotic and protects cotton seedlings from Pythium ultimum -induced damping-off. Mutants deficient in antibiotic biosynthesis were isolated using NTG mutagenesis. Cosmids containing genes for antibiotic biosynthesis were identified by complementing mutants with an HV37a library.

L2 ANSWER 49 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1986:68891 BIOSIS
DOCUMENT NUMBER: PREV198630068891; BR30:68891
TITLE: REGULATION OF ANTIBIOTIC BIOSYNTHESIS IN PSEUDOMONAS-FLUORESCENS STRAIN HY-37A.
AUTHOR(S): **GUTTERSON N I** [Reprint author]; WARREN G J
CORPORATE SOURCE: ADVANCED GENETICS SCI INC, 6701 SAN PABLO AVE, OAKLAND, CA 94608, USA
SOURCE: Phytopathology, (1985) Vol. 75, No. 11, pp. 1325.
Meeting Info.: ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY, RENO, NEVADA, USA, AUG. 11-15,

1985. PHYTOPATHOLOGY.
CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 25 Apr 1986
Last Updated on STN: 25 Apr 1986

L2 ANSWER 50 OF 58 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1985:6766 BIOSIS
DOCUMENT NUMBER: PREV198528006766; BR28:6766
TITLE: SECRETION OF LYTIC ACTIVITIES BY TRICHODERMA A MYCOPARASITE OF PYTHIUM-ULTIMUM.
AUTHOR(S): **GUTTERSON N** [Reprint author]; SUSLOW T; WARREN G
CORPORATE SOURCE: ADVANCED GENETIC SCI, 6701 SAN PABLO AVE, OAKLAND, CA 94608, USA
SOURCE: Phytopathology, (1984) Vol. 74, No. 7, pp. 877.
Meeting Info.: 1984 ANNUAL MEETING OF THE PHYTOPATHOLOGICAL SOCIETY, ONTARIO, CANADA, AUG. 12-16, 1984. PHYTOPATHOLOGY.
CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH

L2 ANSWER 51 OF 58 MEDLINE on STN DUPLICATE 25
ACCESSION NUMBER: 85044658 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6388407
TITLE: A diffusion assay for detection and quantitation of methyl-esterified proteins on polyacrylamide gels.
AUTHOR: Chelsky D; **Gutterson N I**; Koshland D E Jr
CONTRACT NUMBER: AM09765 (NIADDK)
SOURCE: Analytical biochemistry, (1984 Aug 15) 141 (1) 143-8.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198412
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19980206
Entered Medline: 19841218
AB The methyl esterification of bacterial and mammalian proteins is a subject of increasing interest and effort. Such studies in intact cells typically involve the use of [methyl-3H]methionine which is taken up and incorporated into S-adenosyl-L-methionine, the methyl donor. The level of methylation, however, is much less than the incorporation of labeled methionine directly into protein. A diffusion assay which distinguishes [3H]methionine from the base-labile [3H]methyl esters is described here. The ester linkage is hydrolyzed at high pH to release [3H]methanol from the sample which diffuses into an adjacent pool of scintillation fluid. The assay is contained in a scintillation vial which can be counted directly.

L2 ANSWER 52 OF 58 MEDLINE on STN DUPLICATE 26
ACCESSION NUMBER: 83273719 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6308658
TITLE: Replacement and amplification of bacterial genes with sequences altered in vitro.
AUTHOR: **Gutterson N I**; Koshland D E Jr
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (1983 Aug) 80 (16) 4894-8.
Journal code: 7505876. ISSN: 0027-8424.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 198309
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19980206
Entered Medline: 19830920

AB An efficient method for the replacement of chromosomal DNA by segments altered in vitro has been developed for bacteria. The method requires (i) a recombinant plasmid with a ColE1-like replicon and (ii) a strain defective in DNA polymerase I (polA), which is unable to replicate the plasmid extrachromosomally. This method is of general use since there are a number of suitable vectors and polA strains are available in both Escherichia coli and Salmonella typhimurium, the two most widely studied bacterial species. Using the method, we have constructed two chromosomal deletions in the chemotaxis gene region of S. typhimurium. In addition, plasmid sequences integrated into the chromosome have been amplified up to 30-fold by varying the concentration of ampicillin or tetracycline in the growth medium.

L2 ANSWER 53 OF 58 MEDLINE on STN DUPLICATE 27
ACCESSION NUMBER: 84206608 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6327176
TITLE: Information processing in a sensory system.
AUTHOR: Koshland D E Jr; Russo A F; **Gutterson N I**
SOURCE: Cold Spring Harbor symposia on quantitative biology, (1983) 48 Pt 2 805-10.
Journal code: 1256107. ISSN: 0091-7451.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198407
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19840711

L2 ANSWER 54 OF 58 LIFESCI COPYRIGHT 2004 CSA on STN
ACCESSION NUMBER: 83:88343 LIFESCI
TITLE: Information processing in a sensory system.
MOLECULAR NEUROBIOLOGY.
AUTHOR: Koshland, D.E.,Jr.; Russo, A.F.; **Gutterson, N.I.**
CORPORATE SOURCE: Dep. Biochem., Univ. California, Berkeley, CA 94720, USA; Cold Spring Harbor Lab., Cold Spring Harbor, NY (USA)
SOURCE: COLD SPRING HARBOR SYMP. QUANT. BIOL., (1983) pp. 805-810.
Meeting Info.: 48. Cold Spring Harbor Symposia on Quantitative Biology. Symposium on Molecular Neurobiology. Cold Spring Harbor, NY (USA). Jun 1983.
ISBN: 0-87969-048-8.
DOCUMENT TYPE: Book
TREATMENT CODE: Conference
FILE SEGMENT: R; M; L; J
LANGUAGE: English

AB The bacterium is similar to a neuron in the sense that it receives its information from receptors, is capable of integrating information from different receptors, and delivers an output that is the result of this integrative processing. The bacterial cell and the neuron share these common features with other cells that receive and process information from the environment through receptors. To clarify the information processing role of receptors, it was desirable to isolate a receptor, modify it systematically, and study its various functions individually. The aspartate receptor involved in chemotaxis was an attractive vehicle for this kind of study. The 60,000-dalton protein has been purified and reconstituted into phospholipid vesicles so that its functions can now be studied both in vivo and in vitro. In addition, it was of interest to overproduce the receptor to see how this increased level would change the information processing.

L2 ANSWER 55 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 28
ACCESSION NUMBER: 1980:214802 CAPLUS
DOCUMENT NUMBER: 92:214802
TITLE: Conformational properties of 5-alkoxy and 5-alkyl substituted trimethylene phosphates in solution
AUTHOR(S): Gerlt, John A.; **Gutterson, Neal I.**; Drews, Reed E.; Sokolow, Jay A.
CORPORATE SOURCE: Dep. Chem., Yale Univ., New Haven, CT, 06520, USA
SOURCE: Journal of the American Chemical Society (1980), 102(5), 1665-70
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
AB NMR studies were carried out on the solution conformations of trimethylene phosphate (2-hydroxy-2-oxo-1,3,2-dioxaphosphorinane) substituted at the 5 position with alkyl and alkoxy groups. The conformational energies of the alkyl groups are essentially independent of solvent, with values from 0.5 to 0.8 kcal/mol being found for the equatorial preferences of Me, Et, Me2CH, and Me3C. However, with alkoxy groups, the conformational energies are solvent dependent, with the values for 5-MeO ranging from 1.0 kcal/mol favoring the axial position in D2O to 0.2 kcal/mol favoring the equatorial position in acetone-d6. These results can be explained by assuming that polar solvents preferentially solvate the most polar conformation of a conformationally flexible solute. Since the 5-alkoxy substituent of the trimethylene phosphate ring in cyclic AMP is constrained to be in an equatorial position by the transfusion of the trimethylene phosphate-ribofuranoside ring system, solvation effects appear to be important in the observed thermodn. instability of cyclic AMP in water. A biochem. role for this solvation effect in proposed.

L2 ANSWER 56 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 29
ACCESSION NUMBER: 1980:176456 CAPLUS
DOCUMENT NUMBER: 92:176456
TITLE: Thermochemical identification of the structural factors responsible for the thermodynamic instability of 3',5'-cyclic nucleotides
AUTHOR(S): Gerlt, John A.; **Gutterson, Neal I.**; Datta, Pradip; Belleau, Bernard; Penney, Christopher L.
CORPORATE SOURCE: Dep. Chem., Yale Univ., New Haven, CT, 06520, USA
SOURCE: Journal of the American Chemical Society (1980), 102(5), 1655-60
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The enthalpies of hydrolysis of several cyclic phosphate diesters which can be considered to be structural analogs of the trans-fused trimethylene phosphate-ribofuranoside ring system of adenosine 3',5'-cyclic phosphate were determined by microcalorimetric techniques with the metal-dependent phosphohydrolase from Enterobacter aerogenes as catalyst. At pH 7.3 and 25°, values were obtained for the following Na salts: trans-2-hydroxytetrahydrofuranmethanol cyclic phosphate, trans-2-hydroxycyclopentanemethanol cyclic phosphate, cis-2-hydroxycyclopentanemethanol cyclic phosphate, 5-methoxytrimethylene phosphate, and 5-methyltrimethylene phosphate. Evidently, the trans-fused trimethylene phosphate-tetrahydrofuran structure is responsible for the 8 kcal/mol more exothermic enthalpy of hydrolysis which cAMP displays relative to trimethylene phosphate. About 5 kcal/mol of the excess enthalpy of hydrolysis of cAMP is the result of geometric distortion due to the trans-ring fusion. About 3 kcal/mol of the excess enthalpy of hydrolysis of cAMP cannot be accounted for by intramol. effects, suggesting that solvation effects play an important role in the thermodn. stability of cAMP.

L2 ANSWER 57 OF 58 MEDLINE on STN DUPLICATE 30

ACCESSION NUMBER: 79069219 MEDLINE
DOCUMENT NUMBER: PubMed ID: 214528
TITLE: Metabolic trapping as a principle of oradiopharmaceutical design: some factors resposible for the biodistribution of [18F] 2-deoxy-2-fluoro-D-glucose.
AUTHOR: Gallagher B M; Fowler J S; **Gutterson N I**; MacGregor R R; Wan C N; Wolf A P
SOURCE: Journal of nuclear medicine : official publication, Society of Nuclear Medicine, (1978 Oct) 19 (10) 1154-61. Journal code: 0217410. ISSN: 0161-5505.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197902
ENTRY DATE: Entered STN: 19900314
Last Updated on STN: 19900314
Entered Medline: 19790226

L2 ANSWER 58 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1977:12767 CAPLUS
DOCUMENT NUMBER: 86:12767
TITLE: Cyclic AMP
AUTHOR(S): **Gutterson, Neal**
CORPORATE SOURCE: Yale Coll., New Haven, CT, USA
SOURCE: Yale Scientific (1976), 51(1), 17-22, 32 CODEN: YSMAAA; ISSN: 0044-0140
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 21 refs.

=> s l2 and nos
L3 6 L2 AND NOS

=> d l3

L3 ANSWER 1 OF 6 MEDLINE on STN
AN 2003097947 MEDLINE
DN PubMed ID: 12609050
TI Inverted repeat of a heterologous 3'-untranslated region for high-efficiency, high-throughput gene silencing.
AU Brummell David A; Balint-Kurti Peter J; Harpster Mark H; Palys Joseph M; Oeller Paul W; **Gutterson Neal**
CS DNA Plant Technology, 6701 San Pablo Avenue, Oakland, CA 94608, USA.. brummelld@crop.cri.nz
SO Plant journal : for cell and molecular biology, (2003 Feb) 33 (4) 793-800. Journal code: 9207397. ISSN: 0960-7412.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200305
ED Entered STN: 20030302
Last Updated on STN: 20030516
Entered Medline: 20030515

=> d l3 ibib tot

L3 ANSWER 1 OF 6 MEDLINE on STN
ACCESSION NUMBER: 2003097947 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12609050
TITLE: Inverted repeat of a heterologous 3'-untranslated region for high-efficiency, high-throughput gene silencing.

AUTHOR: Brummell David A; Balint-Kurti Peter J; Harpster Mark H; Palys Joseph M; Oeller Paul W; **Gutterson Neal**
CORPORATE SOURCE: DNA Plant Technology, 6701 San Pablo Avenue, Oakland, CA 94608, USA.. brummelld@crop.cri.nz
SOURCE: Plant journal : for cell and molecular biology, (2003 Feb) 33 (4) 793-800.
Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 20030302
Last Updated on STN: 20030516
Entered Medline: 20030515

L3 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:142846 CAPLUS
DOCUMENT NUMBER: 136:178951
TITLE: Improved methods of gene silencing in plant using inverted repeat sequences from **NOS** gene
INVENTOR(S): **Gutterson, Neal**; Oeller, Paul
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014472	A2	20020221	WO 2001-US25538	20010814
WO 2002014472	A3	20020718		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003018993	A1	20030123	US 2001-924197	20010807
AU 2001088257	A5	20020225	AU 2001-88257	20010814

PRIORITY APPLN. INFO.:
US 2000-225508P P 20000815
US 2001-924197 A 20010807
WO 2001-US25538 W 20010814

L3 ANSWER 3 OF 6 USPATFULL on STN
ACCESSION NUMBER: 2003:25146 USPATFULL
TITLE: Methods of gene silencing using inverted repeat sequences
INVENTOR(S): **Gutterson, Neal**, Oakland, CA, UNITED STATES
Oeller, Paul, Berkeley, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003018993	A1	20030123
APPLICATION INFO.:	US 2001-924197	A1	20010807 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-225508P	20000815 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
NUMBER OF CLAIMS: 53
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1382
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 4 OF 6 USPATFULL on STN
ACCESSION NUMBER: 2002:116465 USPATFULL
TITLE: Two component plant cell lethality methods and compositions
INVENTOR(S): **Gutterson, Neal**, Oakland, CA, United States
Ralston, Ed, Pleasant Hill, CA, United States
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, Oakland, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6392119	B1	20020521
APPLICATION INFO.:	US 1998-12895		19980123 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-36483P	19970124 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Nelson, Amy J.
ASSISTANT EXAMINER: Zaghmout, Ousama M. F.
LEGAL REPRESENTATIVE: Townsend and Townsend and Crew LLP
NUMBER OF CLAIMS: 25
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT: 2152

L3 ANSWER 5 OF 6 USPATFULL on STN
ACCESSION NUMBER: 2002:4728 USPATFULL
TITLE: Production of polyketides in plants
INVENTOR(S): Betlach, Mary C., San Francisco, CA, UNITED STATES
Kealey, James T., Davis, CA, UNITED STATES
Gutterson, Neal, Oakland, CA, UNITED STATES
Ralston, Ed, Pleasant Hill, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002002712	A1	20020103
APPLICATION INFO.:	US 2001-847089	A1	20010501 (9)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1998-114083, filed on 10 Jul 1998, GRANTED, Pat. No. US 6262340

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-52211P	19970710 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Kate H. Murashige, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130-2332
NUMBER OF CLAIMS: 33
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1406
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 6 OF 6 USPATFULL on STN

ACCESSION NUMBER: 2001:112604 USPATFULL
TITLE: Production of polyketides in plants
INVENTOR(S): Betlach, Mary C., San Francisco, CA, United States
Kealey, James T., Davis, CA, United States
Gutterson, Neal, Oakland, CA, United States
Ralston, Ed, Pleasant Hill, CA, United States
PATENT ASSIGNEE(S): Kosan Biosciences, Inc., Burlingame, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6262340	B1	20010717
APPLICATION INFO.:	US 1998-114083		19980710 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-52211P	19970710 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Hutzell, Paula K.
ASSISTANT EXAMINER: Zaghmout, Ousama
LEGAL REPRESENTATIVE: Morrison & Foerster, Kaster, Kevin, Murasurge, Kate
NUMBER OF CLAIMS: 65
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 1651
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> s l3 ind invert?
MISSING OPERATOR L3 IND
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l3 and invert?
L4 5 L3 AND INVERT?

=> d l4 ibib tot

L4 ANSWER 1 OF 5 MEDLINE on STN
ACCESSION NUMBER: 2003097947 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12609050
TITLE: **Inverted** repeat of a heterologous 3'-untranslated region for high-efficiency, high-throughput gene silencing.
AUTHOR: Brummell David A; Balint-Kurti Peter J; Harpster Mark H; Palys Joseph M; Oeller Paul W; **Gutterson Neal**
CORPORATE SOURCE: DNA Plant Technology, 6701 San Pablo Avenue, Oakland, CA 94608, USA.. brummelld@crop.cri.nz
SOURCE: Plant journal : for cell and molecular biology, (2003 Feb) 33 (4) 793-800.
Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 20030302
Last Updated on STN: 20030516
Entered Medline: 20030515

L4 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:142846 CAPLUS
DOCUMENT NUMBER: 136:178951
TITLE: Improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS**

gene
INVENTOR(S): **Gutterson, Neal**; Oeller, Paul
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014472	A2	20020221	WO 2001-US25538	20010814
WO 2002014472	A3	20020718		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003018993	A1	20030123	US 2001-924197	20010807
AU 2001088257	A5	20020225	AU 2001-88257	20010814

PRIORITY APPLN. INFO.: US 2000-225508P P 20000815
US 2001-924197 A 20010807
WO 2001-US25538 W 20010814

L4 ANSWER 3 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2003:25146 USPATFULL
TITLE: Methods of gene silencing using **inverted** repeat sequences
INVENTOR(S): **Gutterson, Neal**, Oakland, CA, UNITED STATES
Oeller, Paul, Berkeley, CA, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003018993	A1	20030123	
APPLICATION INFO.:	US 2001-924197	A1	20010807	(9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-225508P	20000815 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
NUMBER OF CLAIMS: 53
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1382
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 4 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2002:4728 USPATFULL
TITLE: Production of polyketides in plants
INVENTOR(S): Betlach, Mary C., San Francisco, CA, UNITED STATES
Kealey, James T., Davis, CA, UNITED STATES
Gutterson, Neal, Oakland, CA, UNITED STATES
Ralston, Ed, Pleasant Hill, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002002712	A1	20020103

APPLICATION INFO.: US 2001-847089 A1 20010501 (9)
RELATED APPLN. INFO.: Continuation of Ser. No. US 1998-114083, filed on 10 Jul 1998, GRANTED, Pat. No. US 6262340

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-52211P	19970710 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Kate H. Murashige, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130-2332
NUMBER OF CLAIMS: 33
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1406
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 5 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2001:112604 USPATFULL
TITLE: Production of polyketides in plants
INVENTOR(S): Betlach, Mary C., San Francisco, CA, United States
Kealey, James T., Davis, CA, United States
Gutterson, Neal, Oakland, CA, United States
Ralston, Ed, Pleasant Hill, CA, United States
PATENT ASSIGNEE(S): Kosan Biosciences, Inc., Burlingame, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6262340	B1	20010717
APPLICATION INFO.:	US 1998-114083		19980710 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-52211P	19970710 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Hutzell, Paula K.
ASSISTANT EXAMINER: Zaghmout, Ousama
LEGAL REPRESENTATIVE: Morrison & Foerster, Kaster, Kevin, Murasurge, Kate
NUMBER OF CLAIMS: 65
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 1651
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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'KWICTOT' IS NOT A VALID FORMAT
In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.
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'TOT' IS NOT A VALID FORMAT
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REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):
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REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):kwic

L4 ANSWER 1 OF 5 MEDLINE on STN
TI **Inverted** repeat of a heterologous 3'-untranslated region for high-efficiency, high-throughput gene silencing.
AU Brummell David A; Balint-Kurti Peter J; Harpster Mark H; Palys Joseph M; Oeller Paul W; **Gutterson Neal**
AB This report describes a method for the easy generation of **inverted** repeat constructs for the silencing of genes of unknown sequence which is applicable to high-throughput studies. This improved procedure for high-efficiency gene silencing is specific for a target gene, but does not require **inverted** repeat DNA of the target gene in the construct. The method employs an **inverted** repeat of the 3'-untranslated region (3'-UTR) of a heterologous gene, and has been demonstrated using the 3'-UTR region of the nopaline synthase (**nos**) gene from Agrobacterium tumefaciens, which is often used as the 3'-UTR for transgene constructs. In a population of independent tomato primary transformants harboring a stably integrated polygalacturonase (PG) transgene driven by a constitutive promoter and linked to an **inverted** repeat of the **nos** 3'-UTR, 51 of 56 primary transformants (91% of the population) showed highly effective post-transcriptional silencing of the PG gene, with. . . the constructs, since a gene of interest can be inserted into a binary vector already containing the promoter and the **inverted** **nos** domain in a single-cloning step, and does not require any knowledge of the DNA sequence. The approach is suitable for. . .

=> d l4 ibib kwic tot

L4 ANSWER 1 OF 5 MEDLINE on STN
ACCESSION NUMBER: 2003097947 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12609050
TITLE: **Inverted** repeat of a heterologous 3'-untranslated region for high-efficiency, high-throughput gene silencing.
AUTHOR: Brummell David A; Balint-Kurti Peter J; Harpster Mark H; Palys Joseph M; Oeller Paul W; **Gutterson Neal**
CORPORATE SOURCE: DNA Plant Technology, 6701 San Pablo Avenue, Oakland, CA 94608, USA.. brummelld@crop.cri.nz
SOURCE: Plant journal : for cell and molecular biology, (2003 Feb) 33 (4) 793-800.
Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 20030302
Last Updated on STN: 20030516
Entered Medline: 20030515
TI **Inverted** repeat of a heterologous 3'-untranslated region for high-efficiency, high-throughput gene silencing.
AU Brummell David A; Balint-Kurti Peter J; Harpster Mark H; Palys Joseph M; Oeller Paul W; **Gutterson Neal**
AB This report describes a method for the easy generation of **inverted** repeat constructs for the silencing of genes of unknown sequence which is applicable to high-throughput studies. This improved procedure for high-efficiency gene silencing is specific for a target gene, but does not require **inverted** repeat DNA of the target gene in the construct. The method employs an **inverted** repeat of the 3'-untranslated region (3'-UTR) of a heterologous gene, and has been demonstrated using the 3'-UTR region of the nopaline synthase (**nos**) gene from Agrobacterium tumefaciens, which is often used as the 3'-UTR for transgene constructs. In a population of independent tomato primary transformants harboring a stably integrated polygalacturonase (PG) transgene driven by a constitutive promoter and linked to an **inverted** repeat of the **nos** 3'-UTR, 51 of 56 primary transformants (91% of the population) showed highly effective post-transcriptional silencing of the PG gene,

with. . . the constructs, since a gene of interest can be inserted into a binary vector already containing the promoter and the **inverted** **nos** domain in a single-cloning step, and does not require any knowledge of the DNA sequence. The approach is suitable for. . .

L4 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:142846 CAPLUS
DOCUMENT NUMBER: 136:178951
TITLE: Improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene
INVENTOR(S): **Gutterson, Neal**; Oeller, Paul
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014472	A2	20020221	WO 2001-US25538	20010814
WO 2002014472	A3	20020718		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003018993	A1	20030123	US 2001-924197	20010807
AU 2001088257	A5	20020225	AU 2001-88257	20010814

PRIORITY APPLN. INFO.:
US 2000-225508P P 20000815
US 2001-924197 A 20010807
WO 2001-US25538 W 20010814

TI Improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene
IN **Gutterson, Neal**; Oeller, Paul
AB The present invention provides methods for inhibiting target gene expression, by expressing in a cell a nucleic acid construct comprising an **inverted** repeat and a sense or antisense region having substantial sequence identity to a target gene, wherein the **inverted** repeat is unrelated to the target gene. The **inverted** repeat is chosen from any suitable sequence and has the ability to form a double stranded RNA in the cell. N another preferred embodiment, the heterologous **inverted** repeat of the invention is from Agrobacteriumn tumefaciens **NOS** gene or from the 3' untranslated region of the **NOS** gene. In one embodiment, the improved gene silencing construct is expressed in a plant cell, where the transcript, or fragments thereof, is taken up by plant pathogens such as fungi, bacteria, nematodes, e.g., cyst and root knot nematodes, and insects, e.g., sucking insects, leading to gene silencing in the pathogen. In another embodiment, the improved gene silencing construct is expressed in a transgenic plant, and is used to regulate expression of the transgene. N another embodiment, the gene silencing vector is used to regulate expression of an endogenous plant gene, e.g., to regulate plant phenotypes such as disease resistance.
ST gene silencing plant **inverted** repeat **NOS**; plant disease resistance gene silencing
IT Promoter (genetic element)
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(34S, from figwort mosaic virus; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Promoter (genetic element)
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(35S, from cauliflower mosaic virus; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Genetic element
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(3'-untranslated region, **inverted** repeat from; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Genetic element
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(5'-untranslated region, **inverted** repeat from; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Agrobacterium
Agrobacterium tumefaciens
(**NOS** gene from; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Beta vulgaris
Cabbage
Capsicum
Daucus carota
Disease resistance, plant
Gossypium hirsutum
Medicago sativa
Musa
Pea
Phaseolus vulgaris
Pineapple (Ananas comosus)
Plant cell
Potato (Solanum tuberosum)
Rice (Oryza sativa)
Sorghum
Soybean (Glycine max)
Squash (Cucurbita)
Strawberry
Tomato
Vitis vinifera
Wheat
Yam (Dioscorea)
Zea mays
(improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Antisense DNA
Silencer (genetic element)
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Double stranded RNA
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(**inverted** repeat sequences form; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Repetitive DNA
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(**inverted**; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT DNA

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(linker, between two element of **inverted** repeat; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Gene, microbial
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**nos**; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT DNA sequences
(of plasmid vector pFP-IRN1; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Plasmid vectors
(pFP-IRN1; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(pathogen target; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Figwort mosaic virus
(promoter 34S from; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Cauliflower mosaic virus
(promoter 35S from; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Transcriptional regulation
(silencing; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Eubacteria
Fungi
Insecta
Nematoda
Virus
(targeting sequence from; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Codons
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(termination, premature, to inhibit translation of targeting sequence; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Genetic element
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(terminator, **inverted** repeat from; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Promoter (genetic element)
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(tissue specific; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT Embryophyta
(transgenic; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT 9032-75-1, Polygalacturonase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(gene for, as target; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT 71245-09-5, Nopaline synthase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(gene for; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

IT 400199-60-2 400199-61-3
RL: PRP (Properties)
(unclaimed sequence; improved methods of gene silencing in plant using **inverted** repeat sequences from **NOS** gene)

L4 ANSWER 3 OF 5 USPATFULL on STN

ACCESSION NUMBER: 2003:25146 USPATFULL

TITLE: Methods of gene silencing using **inverted** repeat sequences

INVENTOR(S): **Gutterson, Neal**, Oakland, CA, UNITED STATES
Oeller, Paul, Berkeley, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003018993	A1	20030123
APPLICATION INFO.:	US 2001-924197	A1	20010807 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-225508P	20000815 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
NUMBER OF CLAIMS: 53
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1382
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

TI Methods of gene silencing using **inverted** repeat sequences

IN **Gutterson, Neal**, Oakland, CA, UNITED STATES

AB . . . present invention provides methods for inhibiting target gene expression, by expressing in a cell a nucleic acid construct comprising an **inverted** repeat and a sense or antisense region having substantial sequence identity to a target gene, wherein the **inverted** repeat is unrelated to the target gene.

SUMM . . . enzyme activity in 15% of a population of tomato plants (Hamilton et al., Plant J. 15:737-746 (1998); WO98/53083). However, if **inverted** and sense repeats of part of the 5'-UTR of this ACC oxidase were included in the construct, suppression was observed. . . degradation. In addition, high frequency and high level posttranscriptional gene silencing have been found by introduction either of constructs containing **inverted** repeats of the coding regions of virus or reporter genes, or by crossing together plants expressing the sense and antisense. . .

SUMM . . . provides an improved method for gene silencing that is specific for a target gene but does not require antisense or **inverted** repeat DNA of this gene of interest in the construct. The method employs an **inverted** repeat of an element of the transcript 5' or 3' to the gene of interest, wherein the element is not related by sequence to the gene of interest. The **inverted** repeat sequence can be any convenient heterologous sequence or subsequence thereof, e.g., a leader sequence, a coding region, a transcribed. . . terminator, a polyadenylation sequence, a non-transcribed sequence, e.g., a promoter, or a random sequence, e.g., a synthetic sequence. Preferably, the **inverted** repeat is not part of an intron sequence. An **inverted** sequence repeat of about 30 to more than about 1000 base pairs is incorporated into a sense construct either 5' or 3' to the targeting sequence that targets the endogenous gene. Alternatively, the **inverted** sequence repeat is flanked by a 5' and a 3' targeting sequence. Once the posttranscriptional gene silencing mechanism is triggered, sequences in cis to the **inverted** repeat become targets of gene silencing. This method has the advantage of ease and rapidity in preparation of the constructs, since the **inverted** repeat can be made separately and used for many different transgenes, and is suitable for high-throughput studies. In addition, multiple. . . containing the same repeat element can be silenced at the same time, since the initial silencing trigger mediated through the **inverted** repeat region will apply to all of the transcripts.

SUMM . . . a sense or antisense targeting sequence having substantial identity to at least a subsequence of the target gene, and an **inverted** repeat of a subsequence of an **NOS** gene, wherein the **inverted** repeat is heterologous to the targeting sequence, thereby reducing expression of the target gene.

SUMM . . . a sense or antisense targeting sequence having substantial identity to at least a subsequence of the target gene, and an **inverted** repeat of a subsequence of an **NOS** gene, wherein the **inverted** repeat is heterologous to the targeting sequence.

SUMM . . . a sense or antisense targeting sequence having substantial identity to at least a subsequence of the target gene, and an **inverted** repeat of a subsequence of an **NOS** gene, wherein the **inverted** repeat is heterologous to the targeting sequence.

SUMM [0011] In one embodiment, the **inverted** repeat is in a position 3' to the targeting sequence. In another embodiment, the **inverted** repeat is in a position 5' to the targeting sequence.

SUMM [0012] In one embodiment, the **inverted** repeat is from the 3' untranslated region of the **NOS** gene. In another embodiment, the **inverted** repeat is from the terminator region of the **NOS** gene. In another embodiment, the **inverted** repeat is from the 5' untranslated region of the **NOS** gene. In another embodiment, the **inverted** repeat is from the coding region of the **NOS** gene. In another embodiment, the **NOS** gene is from an Agrobacterium sp.

SUMM [0013] In one embodiment, the **inverted** repeat comprises a sense region, a linker region, and an antisense region. In another embodiment, the **inverted** repeat is from about 30 to about 200 nucleotides in length.

DRWD [0020] FIG. 1 provides a schematic representation of a construct containing an **inverted** repeat of the nopaline synthase (**nos**) 3' untranslated region. Arrows indicate the orientation of the DNA fragments used to assemble the construct.

DETD . . . The present invention therefore provides improved methods of gene silencing, by expressing in an organism a nucleic acid having an **inverted** repeat 5' or 3' to a sense or antisense targeting sequence, wherein the sense or antisense targeting sequence has substantial sequence identity to the target gene to be suppressed, but the **inverted** repeat is not related by sequence to the target gene. In another embodiment, the heterologous **inverted** repeat is flanked by a 5' and 3' targeting sequence.

DETD [0024] The **inverted** repeat is chosen from any suitable sequence, and is typically from about 30 to about 1000 base pairs in length, preferably 30 to about 600, or 30 to 200 base pairs in length. Each element of the **inverted** repeat is about 15 to about 500 base pairs in length, preferably about 15 to about 100 base pairs in length. The **inverted** repeat has the ability to form a double stranded RNA in the cell. Without being tied to theory, the **inverted** repeat transcript may form a hairpin or a stem loop structure. The repeat may also comprise a linker between the two elements of the **inverted** repeat, the linker typically being from about 15 to about 200 base pairs in length. In a preferred embodiment, the heterologous **inverted** repeat of the invention is from the **NOS** gene (nopaline synthase gene) of soil bacteria, e.g., Agrobacterium species (see, e.g., FIG. 1). In another preferred embodiment, the **NOS** gene is from Agrobacterium tumefaciens. In another preferred embodiment, the heterologous **inverted** repeat of the invention is from the 3' untranslated region of the **NOS** gene (e.g., complement of nucleotides 26573-28167 of GenBank accession no. AJ237588).

DETD . . . male sterility, etc. In another embodiment, the improved gene silencing construct is used to regulate multiple transgenes having the same **inverted** repeat element.

DETD . . . identity to one another) arranged to make a transcribed nucleic

acid, e.g., a coding region from another source and an **inverted** repeat region from another source.

DETD [0035] "**Inverted** repeat" refers to a nucleic acid sequence comprising a sense and an antisense element positioned so that they are able to form a double stranded RNA when the repeat is transcribed. The **inverted** repeat may optionally include a linker sequence between the two elements of the repeat. The elements of the **inverted** repeat have a length sufficient to form a double stranded RNA. Typically, each element of the **inverted** repeat is about 15 to about 2000 base pairs in length.

DETD . . . a promoter or promoters such that either a sense and an antisense strand of RNA will be transcribed. A heterologous **inverted** repeat is typically positioned at either the 5' or 3' end of the targeting sequence. Alternatively, the **inverted** sequence repeat is flanked by a 5' and a 3' targeting sequence. The construct is then transformed into the organism. . .

DETD [0073] In the example described below, a construct containing an **inverted** repeat of the terminator of the nopaline synthase (**nos**) gene of Agrobacterium tumefaciens was prepared. A schematic representation of the construct possessing an **inverted** repeat of the **nos** 3'-UTR is shown in FIG. 1. An **inverted** **nos** terminator sequence was attached to a downstream sense **nos** terminator separated by a linker sequence, here consisting of a region of plant DNA but for which any sequence of. . . for any gene which is attached, and targets the entire transcript for degradation. Gene silencing is thus accomplished by an **inverted** repeat structure that is incorporated into the intended transcript, but that is not related by sequence to the target gene. To test the efficacy of this approach, a construct containing the **inverted** **nos** repeat was attached to the cDNA for tomato fruit polygalacturonase (PG), a gene which is expressed at particularly high levels. . .

DETD . . . from a plant heat shock 70 (hsp70) gene, the full-length ORF of β-glucuronidase (GUS) as a histological reporter gene, a **nos** 3' terminator, and pGEM-5ZF+ (Promega) as the plasmid vector. To clone PG into this construct, primer-mediated PCR amplification was conducted. . .

DETD . . . the DNA subjected to agarose gel electrophoresis. To remove the GUS reporter gene fragment, the band containing the FMV:hsp70 promoter, **nos** 3' terminator and plasmid vector was purified using the QIAquick.TM. kit as described.

DETD . . . inconvenient restriction endonuclease sites in pKL3063, a fragment of pFMV-PG23 containing a significant portion of the PG ORF and the **nos** 3' terminator was subcloned into a plasmid vector. This enabled the subsequent cloning in the **inverted** orientation of a second **nos** 3' fragment and an accompanying sequence derived from the ORF of a plant endoglucanase gene which provides in vivo stability for the **inverted** repeat (Warren & Green, J. Bacteriol. 161:1103-1111 (1985)). Steps taken in these cloning manipulations are described as follows:

DETD . . . whereas the BamHI fragment containing all but .about.90 bp of PG ORF sequence proximal to the NcoI site and the **nos** 3' terminator sequence was subdloned into plasmid vector DNA.

DETD . . . DNA was ligated to a two-fold molar excess of the previously described BamHI fragment containing the PG ORF and 3' **nos** terminator (ligation conditions were identical to those previously described, except that 1 μl of a {fraction (1/10)} dilution of ligase. . .

DETD [0090] Because the resultant construct, pGEM7-PG2, contains the engineered PstI site designed for subcloning an **inverted** **nos** 3' terminator and a second PstI site proximal to the BamHI cloning site, a PstI (partial)-BglII digestion was conducted. Briefly,. . .

DETD [0091] The source of a second **nos** 3' terminator and a neutral "stuffer" fragment, which is required for the stabilization of

inverted repeat structures in bacteria, and likely higher eukaryotes as well, was obtained from the construct pMHXC1. pMHXC1 is a CaMV 35S promoter fusion to the full-length ORF of a pepper 1,4-β-endonuclease (PCEL1), with **nos** as the 3' terminator sequence. To prepare the "**nos**-stuffer" fragment for ligation to pGEM7-PG2, .about.10 μg of pMHXC1 plasmid DNA was digested to completion with BamHI and PstI (using standard digestion conditions), after which the 370 bp fragment containing the 260 bp **nos** fragment and 110 bp of the 3' end of the PCEL1 ORF was gel purified and prepared for ligation as. . .

DETD . . . from ampicillin resistant colonies provided for the identification of the construct pGEM7-IR1L; a subclone of the PG ORF and an **inverted** repeat of the 260 bp **nos** 3' terminator with 110 bp of PCEL1 ORF DNA serving to stabilize the repeat.

DETD . . . 40 units of BamHI incubated for 2 h at 37° C.), after which the fragment containing the PG ORF and **nos** 3' **inverted** repeat was gel purified and prepared for ligation as previously described for all preceding cloning steps. Ligation of this fragment. . .

DETD . . . (all procedures and conditions as described above). The chimeric gene fragment containing the FMV:hsp70 promoter, the PG ORF and the **inverted nos** 3' terminator was then gel purified and ligated to SmaI digested SVS297nos which had been dephosphorylated using calf alkaline intestinal. . .

DETD [0097] Ripe fruit were harvested from primary transformants of a population of 56 tomato plants transformed with the FMV:PG: **inverted nos** construct, and fruit pericarp was frozen in liquid nitrogen. RNA was prepared from the fruit using a small scale extraction. . .

DETD GENERAL INFORMATION:

NUMBER OF SEQ ID **NOs**: 3

CLM What is claimed is:

. . . a sense or antisense targeting sequence having substantial identity to at least a subsequence of the target gene, and an **inverted** repeat of a subsequence of an **NOS** gene, wherein the **inverted** repeat is heterologous to the targeting sequence, thereby reducing expression of the target gene.

2. The method of claim 1, wherein the **inverted** repeat is in a position 3' to the targeting sequence.

3. The method of claim 1, wherein the **inverted** repeat is in a position 5' to the targeting sequence.

4. The method of claim 1, wherein the **inverted** repeat is from the 3' untranslated region of the **NOS** gene.

5. The method of claim 4, wherein the **inverted** repeat is from the terminator region of the **NOS** gene.

6. The method of claim 1, wherein the **inverted** repeat is from the 5' untranslated region of the **NOS** gene.

7. The method of claim 1, wherein the **inverted** repeat is from the coding region of the **NOS** gene.

8. The method of claim 1, wherein the **NOS** gene is from an Agrobacterium sp.

9. The method of claim 1, wherein the **inverted** repeat comprises a sense region, a linker region, and an antisense region.

10. The method of claim 1, wherein the **inverted** repeat is from about 30 to about 200 nucleotides in length.

. . . a sense or antisense targeting sequence having substantial identity to at least a subsequence of the target gene, and an **inverted** repeat of a subsequence of an **NOS** gene, wherein the **inverted** repeat is heterologous to the targeting sequence.

29. The expression cassette of claim 28, wherein the **inverted** repeat is in a position 3' to the targeting sequence.

30. The expression cassette of claim 28, wherein the **inverted** repeat is in a position 5' to the targeting sequence.

31. The expression cassette of claim 28, wherein the **inverted** repeat is from the 3' untranslated region of the **NOS** gene.

32. The expression cassette of claim 31, wherein the **inverted** repeat is from the terminator region of the **NOS** gene.

33. The expression cassette of claim 28, wherein the **inverted** repeat is from the 5' untranslated region of the **NOS** gene.

34. The expression cassette of claim 28, wherein the **inverted** repeat is from the coding region of the **NOS** gene.

35. The expression cassette of claim 28, wherein the **NOS** gene is from an Agrobacterium sp,

36. The expression cassette of claim 28, wherein the **inverted** repeat comprises a sense region, a linker region, and an antisense region.

37. The expression cassette of claim 28, wherein the **inverted** repeat is from about 30 to about 200 nucleotides in length.

L4 ANSWER 4 OF 5 USPATFULL on STN

ACCESSION NUMBER:	2002:4728 USPATFULL
TITLE:	Production of polyketides in plants
INVENTOR(S):	Betlach, Mary C., San Francisco, CA, UNITED STATES Kealey, James T., Davis, CA, UNITED STATES **Gutterson, Neal**, Oakland, CA, UNITED STATES Ralston, Ed, Pleasant Hill, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002002712	A1	20020103
APPLICATION INFO.:	US 2001-847089	A1	20010501 (9)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 1998-114083, filed on 10 Jul 1998, GRANTED, Pat. No. US 6262340		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-52211P	19970710 (60)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	Kate H. Murashige, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130-2332
NUMBER OF CLAIMS:	33
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	3 Drawing Page(s)
LINE COUNT:	1406

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IN **Gutterson, Neal**, Oakland, CA, UNITED STATES

DETD [0055] Either a constitutive promoter (such as the CaMV or **Nos** promoters), an organ-specific promoter (such as the E8 promoter from tomato) or an inducible promoter is typically ligated to the. . .

DETD . . . to specific subcellular compartments in eukaryotic cells, and particularly in plant cells, has been studied extensively. For example, U.S. Pat. **Nos.** 5,728,925 and 5,717,084 (incorporated herein by reference) describe means by which proteins can be targeted to chloroplasts. Generally chloroplast targeting. . .

DETD . . . can be covered with nylon window screen after planting. Plants will grow through the screen so that when pot is **inverted** for infiltration less dirt falls out.

DETD . . . μM Benzylamino Purine (10 μl per liter of a 1 mg/ml stock in DMSO)) to a dish or beaker and **invert** plants (pot, soil, and all) into liquid solution (submerge the bolts and entire rosettes in the infiltration media).

L4 ANSWER 5 OF 5 USPATFULL on STN

ACCESSION NUMBER:	2001:112604 USPATFULL		
TITLE:	Production of polyketides in plants		
INVENTOR(S):	Betlach, Mary C., San Francisco, CA, United States Kealey, James T., Davis, CA, United States **Gutterson, Neal**, Oakland, CA, United States Ralston, Ed, Pleasant Hill, CA, United States		
PATENT ASSIGNEE(S):	Kosan Biosciences, Inc., Burlingame, CA, United States (U.S. corporation)		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6262340	B1	20010717
APPLICATION INFO.:	US 1998-114083		19980710 (9)
	NUMBER		DATE
PRIORITY INFORMATION:	US 1997-52211P		19970710 (60)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	GRANTED		
PRIMARY EXAMINER:	Hutzell, Paula K.		
ASSISTANT EXAMINER:	Zaghmout, Ousama		
LEGAL REPRESENTATIVE:	Morrison & Foerster, Kaster, Kevin, Murasurge, Kate		
NUMBER OF CLAIMS:	65		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	3 Drawing Figure(s); 3 Drawing Page(s)		
LINE COUNT:	1651		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IN **Gutterson, Neal**, Oakland, CA, United States

DETD Either a constitutive promoter (such as the CaMV or **Nos** promoters), an organ-specific promoter (such as the E8 promoter from tomato) or an inducible promoter is typically ligated to the. . .

DETD . . . to specific subcellular compartments in eukaryotic cells, and particularly in plant cells, has been studied extensively. For example, U.S. Pat. **Nos.** 5,728,925 and 5,717,084 (incorporated herein by reference) describe means by which proteins can be targeted to chloroplasts. Generally chloroplast targeting. . .

DETD . . . expression vector pBI121. This polylinker contains SacI, BamHI, NdeI, XbaI, EcoRi, AvrII, Spel, SnaBI, and Asp718 restriction sites (SEQ ID **NOS**:2 &3):

DETD . . . can be covered with nylon window screen after planting. Plants will grow through the screen so that when pot is **inverted** for infiltration less dirt falls out.

DETD . . . μM Benzylamino Purine (10 μl per liter of a 1 mg/ml stock in DMSO)) to a dish or beaker and **invert** plants (pot, soil, and all) into liquid solution (submerge the bolts and entire rosettes in the infiltration media).

```
=> e oeller p?/au
E1            5     OELLER P/AU
E2           44     OELLER P W/AU
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E3            0 --> OELLER P?/AU
E4           13     OELLER PAUL/AU
E5           32     OELLER PAUL W/AU
E6            1     OELLER PAUL WILLIAM/AU
E7            4     OELLER W/AU
E8           38     OELLERER FRIEDRICH/AU
E9            2     OELLERICH BRUCE A/AU
E10           8     OELLERICH D/AU
E11           1     OELLERICH D W/AU
E12           2     OELLERICH H/AU

=> s e1-e6
L5           95 ("OELLER P"/AU OR "OELLER P W"/AU OR "OELLER P?"/AU OR "OELLER
                PAUL"/AU OR "OELLER PAUL W"/AU OR "OELLER PAUL WILLIAM"/AU)

=> dup rem l5
PROCESSING COMPLETED FOR L5
L6            38 DUP REM L5 (57 DUPLICATES REMOVED)

=> s l6 and invert?
L7             3 L6 AND INVERT?

=> d l7 ibib abs

L7   ANSWER 1 OF 3     MEDLINE on STN
ACCESSION NUMBER:    2003097947     MEDLINE
DOCUMENT NUMBER:     PubMed ID: 12609050
TITLE:               Inverted repeat of a heterologous 3'-untranslated
                     region for high-efficiency, high-throughput gene silencing.
AUTHOR:              Brummell David A; Balint-Kurti Peter J; Harpster Mark H;
                     Palys Joseph M; Oeller Paul W; Gutterson Neal
CORPORATE SOURCE:    DNA Plant Technology, 6701 San Pablo Avenue, Oakland, CA
                     94608, USA.. brummelld@crop.cri.nz
SOURCE:              Plant journal : for cell and molecular biology, (2003 Feb)
                     33 (4) 793-800.
                     Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY:        England: United Kingdom
DOCUMENT TYPE:       Journal; Article; (JOURNAL ARTICLE)
LANGUAGE:            English
FILE SEGMENT:        Priority Journals
ENTRY MONTH:         200305
ENTRY DATE:          Entered STN: 20030302
                     Last Updated on STN: 20030516
                     Entered Medline: 20030515
AB   This report describes a method for the easy generation of inverted
     repeat constructs for the silencing of genes of unknown sequence which is
     applicable to high-throughput studies.  This improved procedure for
     high-efficiency gene silencing is specific for a target gene, but does not
     require inverted repeat DNA of the target gene in the construct.
     The method employs an inverted repeat of the 3'-untranslated
     region (3'-UTR) of a heterologous gene, and has been demonstrated using
     the 3'-UTR region of the nopaline synthase (nos) gene from Agrobacterium
     tumefaciens, which is often used as the 3'-UTR for transgene constructs.
     In a population of independent tomato primary transformants harboring a
     stably integrated polygalacturonase (PG) transgene driven by a
     constitutive promoter and linked to an inverted repeat of the
     nos 3'-UTR, 51 of 56 primary transformants (91% of the population) showed
     highly effective post-transcriptional silencing of the PG gene, with PG
     mRNA abundance in ripe fruit reduced by 98% or more.  The method was also
     effective in Arabidopsis, where two different, relatively uncharacterized
     plant transcription factors were also targeted effectively.  This method
     has the advantage of ease and rapidity in preparation of the constructs,
     since a gene of interest can be inserted into a binary vector already
     containing the promoter and the inverted nos domain in a
     single-cloning step, and does not require any knowledge of the DNA
```

sequence. The approach is suitable for high-throughput gene silencing studies, where it is necessary to investigate the function of hundreds to thousands of uncharacterized genes.

=> d l7 ibib abs 2-3

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:142846 CAPLUS
DOCUMENT NUMBER: 136:178951
TITLE: Improved methods of gene silencing in plant using **inverted** repeat sequences from NOS gene
INVENTOR(S): Gutterson, Neal; **Oeller, Paul**
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014472	A2	20020221	WO 2001-US25538	20010814
WO 2002014472	A3	20020718		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003018993	A1	20030123	US 2001-924197	20010807
AU 2001088257	A5	20020225	AU 2001-88257	20010814

PRIORITY APPLN. INFO.:
US 2000-225508P P 20000815
US 2001-924197 A 20010807
WO 2001-US25538 W 20010814

AB The present invention provides methods for inhibiting target gene expression, by expressing in a cell a nucleic acid construct comprising an **inverted** repeat and a sense or antisense region having substantial sequence identity to a target gene, wherein the **inverted** repeat is unrelated to the target gene. The **inverted** repeat is chosen from any suitable sequence and has the ability to form a double stranded RNA in the cell. N another preferred embodiment, the heterologous **inverted** repeat of the invention is from Agrobacteriumn tumefaciens NOS gene or from the 3' untranslated region of the NOS gene. In one embodiment, the improved gene silencing construct is expressed in a plant cell, where the transcript, or fragments thereof, is taken up by plant pathogens such as fungi, bacteria, nematodes, e.g., cyst and root knot nematodes, and insects, e.g., sucking insects, leading to gene silencing in the pathogen. In another embodiment, the improved gene silencing construct is expressed in a transgenic plant, and is used to regulate expression of the transgene. N another embodiment, the gene silencing vector is used to regulate expression of an endogenous plant gene, e.g., to regulate plant phenotypes such as disease resistance.

L7 ANSWER 3 OF 3 USPATFULL on STN
ACCESSION NUMBER: 2003:25146 USPATFULL
TITLE: Methods of gene silencing using **inverted** repeat sequences
INVENTOR(S): Gutterson, Neal, Oakland, CA, UNITED STATES
Oeller, Paul, Berkeley, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003018993	A1	20030123
APPLICATION INFO.:	US 2001-924197	A1	20010807 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-225508P	20000815 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
NUMBER OF CLAIMS: 53
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1382
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides methods for inhibiting target gene expression, by expressing in a cell a nucleic acid construct comprising an **inverted** repeat and a sense or antisense region having substantial sequence identity to a target gene, wherein the **inverted** repeat is unrelated to the target gene.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

```
=> s invert? and repeat and nos
L8        9389 INVERT? AND REPEAT AND NOS

=> s invert? (5n) repeat and nos
L9        1402 INVERT? (5N) REPEAT AND NOS

=> s (invert? (5n) repeat) and nos
L10       1402 (INVERT? (5N) REPEAT) AND NOS

=> s (invert? (5n) repeat) (p) nos
L11        167 (INVERT? (5N) REPEAT) (P) NOS

=> s l11 and py<2001
   3 FILES SEARCHED...
L12         82 L11 AND PY<2001

=> s l12 and (rnai or ptgs)
L13          1 L12 AND (RNAI OR PTGS)

=> d l13 ibib abs

L13  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:        2000:114342  CAPLUS
DOCUMENT NUMBER:         132:232485
TITLE:                   Heritable and inducible genetic interference by
                         double-stranded RNA encoded by transgenes
AUTHOR(S):               Tavernarakis, Nektarios; Wang, Shi Liang; Dorovkov,
                         Maxim; Ryazanov, Alexey; Driscoll, Monica
CORPORATE SOURCE:        Department of Molecular Biology and Biochemistry,
                         Robert Wood Johnson Medical School, University of
                         Medicine and Dentistry of New Jersey, Rutgers, The
                         State University of New Jersey, Piscataway, NJ, USA
SOURCE:                  Nature Genetics (2000), 24(2), 180-183
                         CODEN: NGENEC; ISSN: 1061-4036
PUBLISHER:               Nature America
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB   Double-stranded RNA interference (RNAi) is an effective method
     for disrupting expression of specific genes in Caenorhabditis elegans and
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other organisms. Applications of this reverse-genetics tool, however, are somewhat restricted in nematodes because introduced dsRNA is not stably inherited. Another difficulty is that **RNAi** disruption of late-acting genes has been generally less consistent than that of embryonically expressed genes, perhaps because the concentration of dsRNA becomes lower as cellular division proceeds or as developmental time advances. In particular, some neuronally expressed genes appear refractory to dsRNA-mediated interference. We sought to extend the applicability of **RNAi** by in vivo expression of heritable **inverted-repeat** (IR) genes. We assayed the efficacy of in vivo-driven **RNAi** in three situations for which heritable, inducible **RNAi** would be advantageous: (i) production of large **nos.** of animals deficient for gene activities required for viability or reproduction; (ii) generation of large populations of phenocopy mutants for biochem. anal.; and (iii) effective gene inactivation in the nervous system. We report that heritable IR genes confer potent and specific gene inactivation for each of these applications. We suggest that a similar strategy might be used to test for dsRNA interference effects in higher organisms in which it is feasible to construct transgenic animals, but impossible to directly or transiently introduce high concns. of dsRNA.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d history

     (FILE 'HOME' ENTERED AT 15:41:32 ON 23 JUN 2004)

     FILE 'MEDLINE, CAPLUS, LIFESCI, EMBASE, USPATFULL, BIOSIS' ENTERED AT
     15:41:52 ON 23 JUN 2004
                E GUTTERSON ?/AU
                E GUTTERSON G?/AU
L1           117 S E6-E11
L2            58 DUP REM L1 (59 DUPLICATES REMOVED)
L3             6 S L2 AND NOS
L4             5 S L3 AND INVERT?
                E OELLER P?/AU
L5            95 S E1-E6
L6            38 DUP REM L5 (57 DUPLICATES REMOVED)
L7             3 S L6 AND INVERT?
L8          9389 S INVERT? AND REPEAT AND NOS
L9          1402 S INVERT? (5N) REPEAT AND NOS
L10         1402 S (INVERT? (5N) REPEAT) AND NOS
L11          167 S (INVERT? (5N) REPEAT) (P) NOS
L12           82 S L11 AND PY<2001
L13            1 S L12 AND (RNAI OR PTGS)

=> s l8 and nopaline
L14         595 L8 AND NOPALINE

=> s l10 and nopaline
L15         182 L10 AND NOPALINE

=> dup rem l15
PROCESSING COMPLETED FOR L15
L16          173 DUP REM L15 (9 DUPLICATES REMOVED)

=> s l11 and nopaline
L17           25 L11 AND NOPALINE

=> dup rem l17
PROCESSING COMPLETED FOR L17
L18           16 DUP REM L17 (9 DUPLICATES REMOVED)
```

=> d l18 ibib abs tot

L18 ANSWER 1 OF 16 USPATFULL on STN
ACCESSION NUMBER: 2003:250997 USPATFULL
TITLE: Methods and means for monitoring and modulating gene silencing
INVENTOR(S): Waterhouse, Peter, Canberra, AUSTRALIA
Wesley, Susan, Canberra, AUSTRALIA
Helliwell, Chris, O'Connor, AUSTRALIA

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003175783	A1	20030918
APPLICATION INFO.:	US 2003-385546	A1	20030312 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-363852P	20020314 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: BURNS DOANE SWECKER & MATHIS L L P, POST OFFICE BOX 1404, ALEXANDRIA, VA, 22313-1404
NUMBER OF CLAIMS: 33
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 1789
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods and means are provided for monitoring and modulating reduction of gene expression in eukaryotic organisms, using double-stranded RNA comprising, in addition to the dsRNA region comprising nucleotide sequences homologous to the target gene, additional dsRNA regions designed to down regulate a second gene or which are unrelated to the target gene.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 2 OF 16 USPATFULL on STN
ACCESSION NUMBER: 2003:239346 USPATFULL
TITLE: Expansin protein and polynucleotides and methods of use
INVENTOR(S): Multani, Dilbag S., Urbandale, IA, UNITED STATES
Johal, Gurmukh S., Urbandale, IA, UNITED STATES
PATENT ASSIGNEE(S): Pioneer Hi-Bred International, Inc. (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003167506	A1	20030904
APPLICATION INFO.:	US 2002-102349	A1	20020320 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-324182P	20010921 (60)
	US 2001-277847P	20010322 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: PIONEER HI-BRED INTERNATIONAL INC., 7100 N.W. 62ND AVENUE, P.O. BOX 1000, JOHNSTON, IA, 50131
NUMBER OF CLAIMS: 28
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Page(s)
LINE COUNT: 2290
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods and compositions for modulating plant growth, strength and flexibility are provided. Nucleotide sequences encoding maize expansin proteins are provided. The sequence can be used in expression cassettes for modulating growth, stalk strength and flexibility. Transformed

plants, plant cells, tissues, and seed are also provided. Methods for rapidly identifying and isolating a Mu-tagged recessive gene mutation in a F1 generation plant, and identification and isolation of its associated wild-type gene are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 3 OF 16 USPATFULL on STN
ACCESSION NUMBER: 2003:25146 USPATFULL
TITLE: Methods of gene silencing using inverted repeat sequences
INVENTOR(S): Gutterson, Neal, Oakland, CA, UNITED STATES
Oeller, Paul, Berkeley, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003018993	A1	20030123
APPLICATION INFO.:	US 2001-924197	A1	20010807 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-225508P	20000815 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
NUMBER OF CLAIMS: 53
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1382
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides methods for inhibiting target gene expression, by expressing in a cell a nucleic acid construct comprising an inverted repeat and a sense or antisense region having substantial sequence identity to a target gene, wherein the inverted repeat is unrelated to the target gene.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 4 OF 16 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2003097947 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12609050
TITLE: Inverted repeat of a heterologous 3'-untranslated region for high-efficiency, high-throughput gene silencing.
AUTHOR: Brummell David A; Balint-Kurti Peter J; Harpster Mark H; Palys Joseph M; Oeller Paul W; Gutterson Neal
CORPORATE SOURCE: DNA Plant Technology, 6701 San Pablo Avenue, Oakland, CA 94608, USA.. brummelld@crop.cri.nz
SOURCE: Plant journal : for cell and molecular biology, (2003 Feb) 33 (4) 793-800.
Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 20030302
Last Updated on STN: 20030516
Entered Medline: 20030515
AB This report describes a method for the easy generation of **inverted repeat** constructs for the silencing of genes of unknown sequence which is applicable to high-throughput studies. This improved procedure for high-efficiency gene silencing is specific for a target gene, but does not require **inverted repeat** DNA of the target gene in the construct. The method employs an **inverted repeat**

of the 3'-untranslated region (3'-UTR) of a heterologous gene, and has been demonstrated using the 3'-UTR region of the **nopaline** synthase (**nos**) gene from Agrobacterium tumefaciens, which is often used as the 3'-UTR for transgene constructs. In a population of independent tomato primary transformants harboring a stably integrated polygalacturonase (PG) transgene driven by a constitutive promoter and linked to an **inverted repeat** of the **nos** 3'-UTR, 51 of 56 primary transformants (91% of the population) showed highly effective post-transcriptional silencing of the PG gene, with PG mRNA abundance in ripe fruit reduced by 98% or more. The method was also effective in Arabidopsis, where two different, relatively uncharacterized plant transcription factors were also targeted effectively. This method has the advantage of ease and rapidity in preparation of the constructs, since a gene of interest can be inserted into a binary vector already containing the promoter and the inverted **nos** domain in a single-cloning step, and does not require any knowledge of the DNA sequence. The approach is suitable for high-throughput gene silencing studies, where it is necessary to investigate the function of hundreds to thousands of uncharacterized genes.

L18 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:142846 CAPLUS
DOCUMENT NUMBER: 136:178951
TITLE: Improved methods of gene silencing in plant using **inverted repeat** sequences from **NOS** gene
INVENTOR(S): Gutterson, Neal; Oeller, Paul
PATENT ASSIGNEE(S): DNA Plant Technology Corporation, USA
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014472	A2	20020221	WO 2001-US25538	20010814
WO 2002014472	A3	20020718		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003018993	A1	20030123	US 2001-924197	20010807
AU 2001088257	A5	20020225	AU 2001-88257	20010814

PRIORITY APPLN. INFO.:
US 2000-225508P P 20000815
US 2001-924197 A 20010807
WO 2001-US25538 W 20010814

AB The present invention provides methods for inhibiting target gene expression, by expressing in a cell a nucleic acid construct comprising an **inverted repeat** and a sense or antisense region having substantial sequence identity to a target gene, wherein the **inverted repeat** is unrelated to the target gene. The **inverted repeat** is chosen from any suitable sequence and has the ability to form a double stranded RNA in the cell. N another preferred embodiment, the heterologous **inverted repeat** of the invention is from Agrobacteriumn tumefaciens **NOS** gene or from the 3' untranslated region of the **NOS** gene. In one embodiment, the improved gene silencing construct is expressed in a plant cell, where the transcript, or fragments thereof, is taken up by plant

pathogens such as fungi, bacteria, nematodes, e.g., cyst and root knot nematodes, and insects, e.g., sucking insects, leading to gene silencing in the pathogen. In another embodiment, the improved gene silencing construct is expressed in a transgenic plant, and is used to regulate expression of the transgene. N another embodiment, the gene silencing vector is used to regulate expression of an endogenous plant gene, e.g., to regulate plant phenotypes such as disease resistance.

L18 ANSWER 6 OF 16 USPATFULL on STN
ACCESSION NUMBER: 2002:193046 USPATFULL
TITLE: Method of modifying the content of cottonseed oil
INVENTOR(S): Green, Allan, Braddon, AUSTRALIA
Singh, Surinder, Downer, AUSTRALIA
Liu, Qing, Latham, AUSTRALIA

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002104124	A1	20020801
APPLICATION INFO.:	US 2001-837751	A1	20010418 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-198124P	20000418 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: GREENLEE WINNER AND SULLIVAN P C, 5370 MANHATTAN CIRCLE, SUITE 201, BOULDER, CO, 80303
NUMBER OF CLAIMS: 61
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 16 Drawing Page(s)
LINE COUNT: 5745
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides novel gene constructs and methods for the production of transgenic cotton plants that produce oils having a range of desirable attributes, including improved oil quality, and modified fatty acid composition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 7 OF 16 USPATFULL on STN
ACCESSION NUMBER: 2002:193043 USPATFULL
TITLE: The maize A3 promoter and methods for use thereof
INVENTOR(S): McElroy, David, Palo Alto, CA, UNITED STATES
Kriz, Alan L., Gales Ferry, CT, UNITED STATES
Orozco, Emil M., JR., West Grove, PA, UNITED STATES
Griffor, Matt, N. Stonington, CT, UNITED STATES
PATENT ASSIGNEE(S): DEKALB GENETICS CORPORATION, Mystic, CT (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002104121	A1	20020801
	US 6583338	B2	20030624
APPLICATION INFO.:	US 2001-850964	A1	20010507 (9)

RELATED APPLN. INFO.: Division of Ser. No. US 1999-312038, filed on 14 May 1999, GRANTED, Pat. No. US 6232526
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: FULBRIGHT & JAWORSKI, L.L.P, 600 Congress Avenue, Suite 2400, Austin, TX, 78701
NUMBER OF CLAIMS: 141
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 16 Drawing Page(s)
LINE COUNT: 6029
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The current invention provides the maize A3 promoter and actin 2 intron. Compositions comprising these sequences are described, as well as transformation constructs derived therefrom. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the A3 promoter directly by genetic transformation, as well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 8 OF 16 USPATFULL on STN

ACCESSION NUMBER:	2001:112512 USPATFULL
TITLE:	RPS gene family, primers, probes, and detection methods
INVENTOR(S):	Ausubel, Frederick M., Newton, MA, United States Staskawicz, Brian J., Castro Valley, CA, United States Bent, Andrew F., Piedmont, CA, United States Dahlbeck, Douglas, Castro Valley, CA, United States Katagiri, Fumiaki, Somerville, MA, United States Kunkel, Barbara N., St. Louis, MO, United States Mindrinos, Michael Nicholas, Somerville, MA, United States Yu, Guo-Liang, Darnestown, MD, United States Baker, Barbara, Richmond, CA, United States Ellis, Jeffrey, Macquarie Act, Australia Salmeron, John, Hillborough, NC, United States
PATENT ASSIGNEE(S):	Massachusetts General Hospital Corporation, Boston, MA, United States (U.S. corporation) The United States of America as represented by the Secretary of Agriculture, Washington, DC, United States (U.S. corporation) Commonwealth Scientific and Industrial Research Organization, Victoria, Australia (non-U.S. corporation) The Regents of the University of California, Oakland, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6262248	B1	20010717
APPLICATION INFO.:	US 1999-301085		19990428 (9)

RELATED APPLN. INFO.:	Division of Ser. No. US 1994-310912, filed on 22 Sep 1994, now patented, Pat. No. US 5981730 Continuation-in-part of Ser. No. US 1994-227360, filed on 13 Apr 1994, now abandoned
DOCUMENT TYPE:	Utility
FILE SEGMENT:	GRANTED
PRIMARY EXAMINER:	LeGuyader, John L.
ASSISTANT EXAMINER:	Epps, Janet L.
LEGAL REPRESENTATIVE:	Clark & Elbing LLP
NUMBER OF CLAIMS:	6
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	36 Drawing Figure(s); 30 Drawing Page(s)
LINE COUNT:	2073

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed is substantially pure DNA encoding an Arabidopsis thaliana Rps2 polypeptide; substantially pure Rps2 polypeptide; and methods of using such DNA to express the Rps2 polypeptide in plant cells and whole plants to provide, in transgenic plants, disease resistance to pathogens. Also disclosed are conserved regions characteristic of the RPS family and primers and probes for the identification and isolation of additional RPS disease-resistance genes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 9 OF 16 USPATFULL on STN
ACCESSION NUMBER: 2001:71760 USPATFULL
TITLE: Maize A3 promoter and methods for use thereof
INVENTOR(S): McElroy, David, Palo Alto, CA, United States
Kriz, Alan L., Gales Ferry, CT, United States
Orozco, Jr., Emil M., West Grove, PA, United States
Griffor, Matt, N. Stonington, CT, United States
PATENT ASSIGNEE(S): Dekalb Genetics Corp., Mystic, CT, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6232526	B1	20010515
APPLICATION INFO.:	US 1999-312038		19990514 (9)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Fox, David T.
ASSISTANT EXAMINER: Ibrahim, Medina A.
LEGAL REPRESENTATIVE: Fulbright & Jaworski LLP
NUMBER OF CLAIMS: 63
EXEMPLARY CLAIM: 16,25,26,27
NUMBER OF DRAWINGS: 15 Drawing Figure(s); 16 Drawing Page(s)
LINE COUNT: 5454
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The current invention provides the maize A3 promoter and actin 2 intron. Compositions comprising these sequences are described, as well as transformation constructs derived therefrom. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the A3 promoter directly by genetic transformation, as well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 10 OF 16 USPATFULL on STN
ACCESSION NUMBER: 1999:142137 USPATFULL
TITLE: RPS gene family, primers, probes, and detection methods
INVENTOR(S): Ausubel, Frederick M., Newton, MA, United States
Staskawicz, Brian J., Castro Valley, CA, United States
Katagiri, Fumiaki, Somerville, MA, United States
Baker, Barbara, Richmond, CA, United States
Ellis, Jeffrey, Macquarie Act 2615, Australia
Salmeron, John, Hillsborough, NC, United States
PATENT ASSIGNEE(S): The General Hospital Corporation, Boston, MA, United States (U.S. corporation)
Commonwealth Scientific and Industrial Research Organisation, Parkville, Australia (non-U.S. corporation)
The United States of America as represented by the Secretary of Agriculture, Washington, DC, United States (U.S. government)
The Regents of the University of California, Oakland, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5981730		19991109
APPLICATION INFO.:	US 1994-310912		19940922 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1994-227360, filed on 13 Apr 1994, now abandoned

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Robinson, Douglas W.
ASSISTANT EXAMINER: Nelson, Amy J.
LEGAL REPRESENTATIVE: Clark & Elbing LLP
NUMBER OF CLAIMS: 1
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 36 Drawing Figure(s); 30 Drawing Page(s)
LINE COUNT: 4405
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is substantially pure DNA encoding an Arabidopsis thaliana Rps2 polypeptide; substantially pure Rps2 polypeptide; and methods of using such DNA to express the Rps2 polypeptide in plant cells and whole plants to provide, in transgenic plants, disease resistance to pathogens. Also disclosed are conserved regions characteristic of the RPS family and primers and probes for the identification and isolation of additional RPS disease-resistance genes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 11 OF 16 USPATFULL on STN
ACCESSION NUMBER: 1999:63444 USPATFULL
TITLE: Crucifer ACC synthase and uses thereof
INVENTOR(S): Van Der Straeten, Dominique, Gent, Belgium
Goodman, Howard, Newton Center, MA, United States
Van Montagu, Marc, Brussels, Belgium
PATENT ASSIGNEE(S): The General Hospital Corporation, Boston, MA, United States (U.S. corporation)
Rijksuniversiteit, Gent, Belgium (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5908971		19990601
APPLICATION INFO.:	US 1995-463418		19950605 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1992-962481, filed on 15 Oct 1992, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: McElwain, Elizabeth F.
LEGAL REPRESENTATIVE: Clark & Elbing LLP
NUMBER OF CLAIMS: 18
EXEMPLARY CLAIM: 13,16
NUMBER OF DRAWINGS: 9 Drawing Figure(s); 4 Drawing Page(s)
LINE COUNT: 1331
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is substantially pure DNA encoding a crucifer ACC synthase polypeptide; a promoter functional in immature plant tissues which is capable of ethylene induction; and methods of using such promoters to express recombinant proteins or RNA and to regulate ethylene-inducible events of a plant, e.g., fruit ripening or senescence, especially during early stages of plant development.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 12 OF 16 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 1999094908 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9878066
TITLE: Production of aberrant promoter transcripts contributes to methylation and silencing of unlinked homologous promoters in trans.
AUTHOR: Mette M F; van der Winden J; Matzke M A; Matzke A J
CORPORATE SOURCE: Institute of Molecular Biology, Austrian Academy of Sciences, Billrothstrasse 11, A-5020 Salzburg, Austria.
SOURCE: EMBO journal, (1999 Jan 4) 18 (1) 241-8.
Journal code: 8208664. ISSN: 0261-4189.

PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AJ007903
ENTRY MONTH: 199902
ENTRY DATE: Entered STN: 19990301
Last Updated on STN: 19990301
Entered Medline: 19990218

AB Previous work has suggested that de novo methylation of plant nuclear genes can be triggered by an RNA-DNA interaction. To test whether transcription of a promoter would induce de novo methylation and silencing of unlinked genes driven by the same promoter, a chimeric 'gene' consisting of a **nopaline** synthase promoter (NOSpro) positioned downstream of the cauliflower mosaic virus 35S promoter (35Spro) and flanked at the 3' end by a **NOS** terminator (NOSter) was constructed and introduced into the genome of a plant that normally expresses an unmethylated NOSpro-neomycinphosphotransferase (nptII) gene. Transformants were tested for kanamycin resistance and NOSpro RNA synthesis. Most produced a full-length polyadenylated NOSpro RNA, which did not induce silencing or methylation at the NOSpro-nptII target gene. One, however, contained truncated non-polyadenylated NOSpro RNA; in this plant, the NOSpro-nptII gene became silenced and methylated in the NOSpro region. Molecular analysis of the NOSpro silencing locus revealed two incomplete copies of the 35Spro-NOSpro gene arranged as an **inverted repeat** with NOSpro sequences at the center. Reducing NOSpro transcription by crossing a 35Spro-silencing locus partially reactivated nptII gene expression and decreased NOSpro methylation at the target locus, thus implicating aberrant NOSpro RNA in this trans-silencing phenomenon.

L18 ANSWER 13 OF 16 USPATFULL on STN
ACCESSION NUMBER: 1998:144245 USPATFULL
TITLE: OCS element
INVENTOR(S): Ellis, Jeff G., Macquarie, Australia
Llewellyn, Daniel J., O'Connor, Australia
Peacock, W. James, Deakin, Australia
Dennis, Elizabeth, Yarralumla, Australia
Bouchez, David, Versaille, France
PATENT ASSIGNEE(S): Agrigenetics, L.P., San Diego, CA, United States (U.S. corporation)
Commonwealth Scientific and Industrial Research Organization, Australia (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5837849		19981117
APPLICATION INFO.:	US 1995-459178		19950602 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1990-525897, filed on 18 May 1990, now patented, Pat. No. US 5573932 which is a continuation-in-part of Ser. No. US 1987-11614, filed on 6 Feb 1987, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Fox, David T.
LEGAL REPRESENTATIVE: Saliwanchik, Lloyd & Saliwanchik
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 34 Drawing Figure(s); 22 Drawing Page(s)
LINE COUNT: 2248
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A DNA fragment is provided which is a plant enhancer element capable of activating or enhancing the transcription level of a plant-expressible gene consisting essentially of a consensus sequence selected from the group consisting of ##STR1## and its reverse sequence. Said DNA fragment

may also contain a second sequence 5' -ACGTAAGCGCTTACGT-3'. These sequences bind with ocs transcription factor.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 14 OF 16 USPATFULL on STN
ACCESSION NUMBER: 1998:7182 USPATFULL
TITLE: Ocs-element
INVENTOR(S): Ellis, Jeff G., Macquarie, Australia
Llewellyn, Daniel J., O'Connor, Australia
Peacock, W. James, Deakin, Australia
Dennis, Elizabeth, Yarralumla, Australia
Bouchez, David, Versaille, France
PATENT ASSIGNEE(S): Agrigenetics, L.P., San Diego, CA, United States (U.S. corporation)
Commonwealth Scientific and Industrial Research Organization, Australia (non-U.S. government)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5710267		19980120
APPLICATION INFO.:	US 1995-460378		19950602 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1990-525897, filed on 18 May 1990, now patented, Pat. No. US 5573932 which is a continuation-in-part of Ser. No. US 1987-11614, filed on 6 Feb 1987, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Fox, David T.
LEGAL REPRESENTATIVE: Saliwanchik, Lloyd & Saliwanchik
NUMBER OF CLAIMS: 34
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 36 Drawing Figure(s); 22 Drawing Page(s)
LINE COUNT: 2442
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A DNA fragment is provided which is a plant enhancer element capable of activating or enhancing the transcription level of a plant-expressible gene consisting essentially of a consensus sequence selected from the group consisting of ##STR1## and its reverse sequence. Said DNA fragment may also contain a second sequence 5'-ACGTAAGCGCTTACGT-3'. These sequences bind with ocs transcription factor.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 15 OF 16 USPATFULL on STN
ACCESSION NUMBER: 96:103896 USPATFULL
TITLE: Ocs element
INVENTOR(S): Ellis, Jeff G., Macquarie, Australia
Llewellyn, Daniel J., O'Connor, Australia
Peacock, W. James, Deakin, Australia
Dennis, Elizabeth, Yarralumla, Australia
Bouchez, David, Versaille, France
PATENT ASSIGNEE(S): Mycogen Plant Sciences, Inc., San Diego, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5573932		19961112
APPLICATION INFO.:	US 1990-525897		19900518 (7)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1987-11614, filed on 6 Feb 1987, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Fox, David T.
LEGAL REPRESENTATIVE: Saliwanchik & Saliwanchik

NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1,10
NUMBER OF DRAWINGS: 34 Drawing Figure(s); 22 Drawing Page(s)
LINE COUNT: 2329
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A DNA fragment is provided which is a plant enhancer element capable of activating or enhancing the transcription level of a plant-expressible gene consisting essentially of a consensus sequence selected from the group consisting of ##STR1## and its reverse sequence. Said DNA fragment may also contain a second sequence 5'-ACGTAAGCGCTTACGT-3'. These sequences bind with ocs transcription factor.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 16 OF 16 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 89218934 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2651882
TITLE: Three distinct regulatory elements comprise the upstream promoter region of the **nopaline** synthase gene.
AUTHOR: Mitra A; An G
CORPORATE SOURCE: Institute of Biological Chemistry, Washington State University, Pullman 99164-6340.
SOURCE: Molecular & general genetics : MGG, (1989 Jan) 215 (2) 294-9.
Journal code: 0125036. ISSN: 0026-8925.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198906
ENTRY DATE: Entered STN: 19900306
Last Updated on STN: 19900306
Entered Medline: 19890608
AB Fine deletion mutants were generated in the upstream control region of the **nopaline** synthase (**nos**) promoter to define the position and role of upstream regulatory elements. The results indicated that the 8 bp sequence (CAGAAACC) at -106/-113 and its **inverted repeat** (GGTTTCTG) at -140/-147 are important for promoter function. The downstream element appears more important than the upstream element since deletion of the former reduced promoter activity more significantly than deletion of the latter. Deletion of the element alone, however, did not abolish promoter function, whereas, deletion of the 10 bp potential Z-DNA-forming (Z) element located between the repeat elements nullified promoter activity. Therefore, it appears that the Z element is an essential upstream regulator and the repeated elements are upstream modulators of the **nos** promoter. These elements are functionally distinct since alteration of stereospecificity or insertion of short oligonucleotides between the elements did not significantly influence promoter activity. These regulatory elements were unable to function from 200 bp upstream of the CCAAT-TATA box region.

=>

---Logging off of STN---

=>
Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS SINCE FILE TOTAL

	ENTRY	SESSION
FULL ESTIMATED COST	241.57	241.78

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-15.94	-15.94

STN INTERNATIONAL LOGOFF AT 16:06:52 ON 23 JUN 2004